October 1979

Smithsonian

The faces of hard times:
Depression art exhibits (p. 44)
include *Dismissal* (above)

The chairman of the bar.

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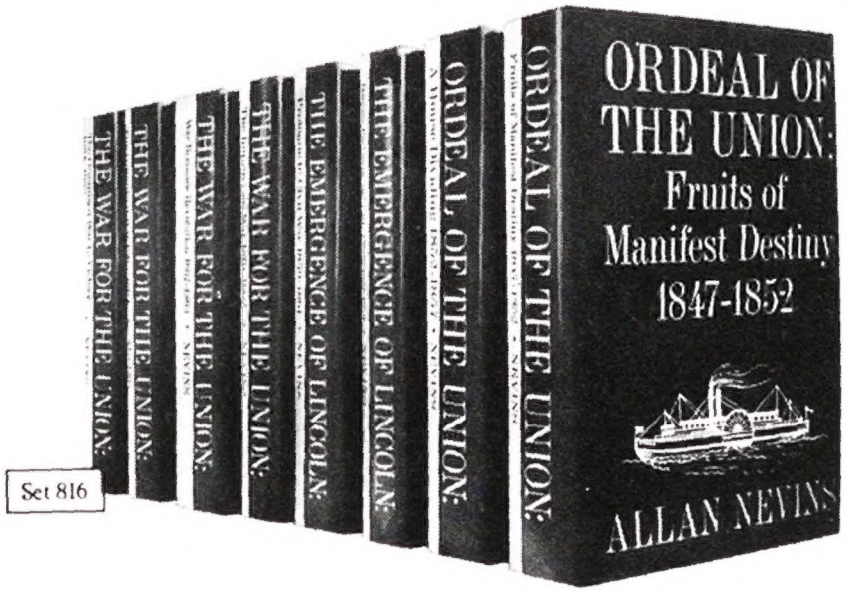

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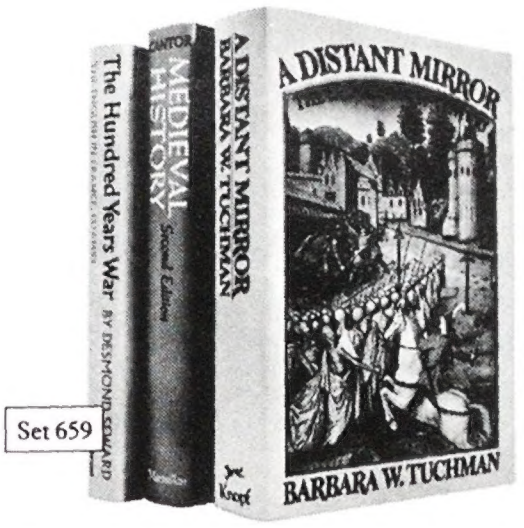

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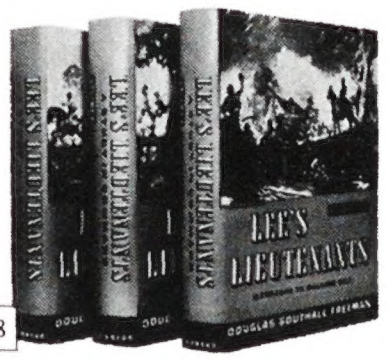

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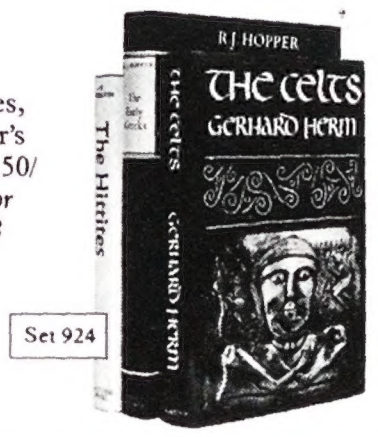

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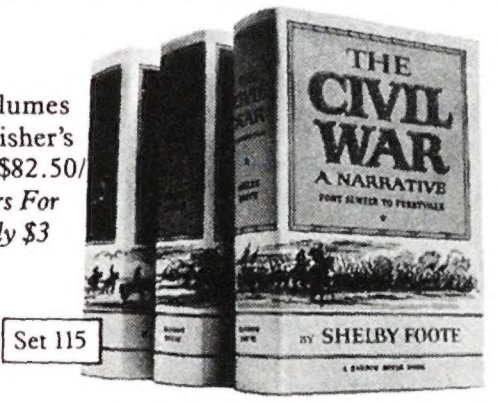

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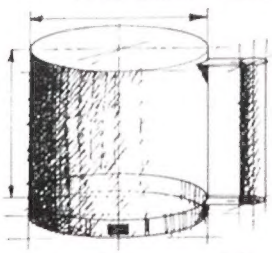

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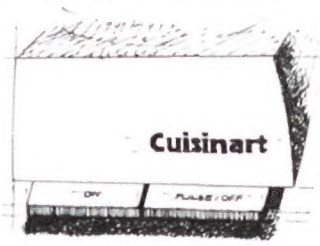

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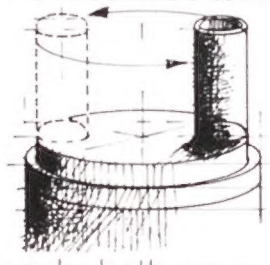

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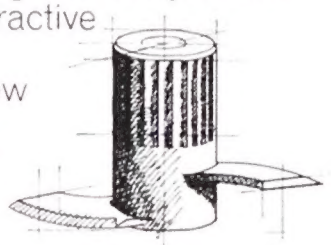

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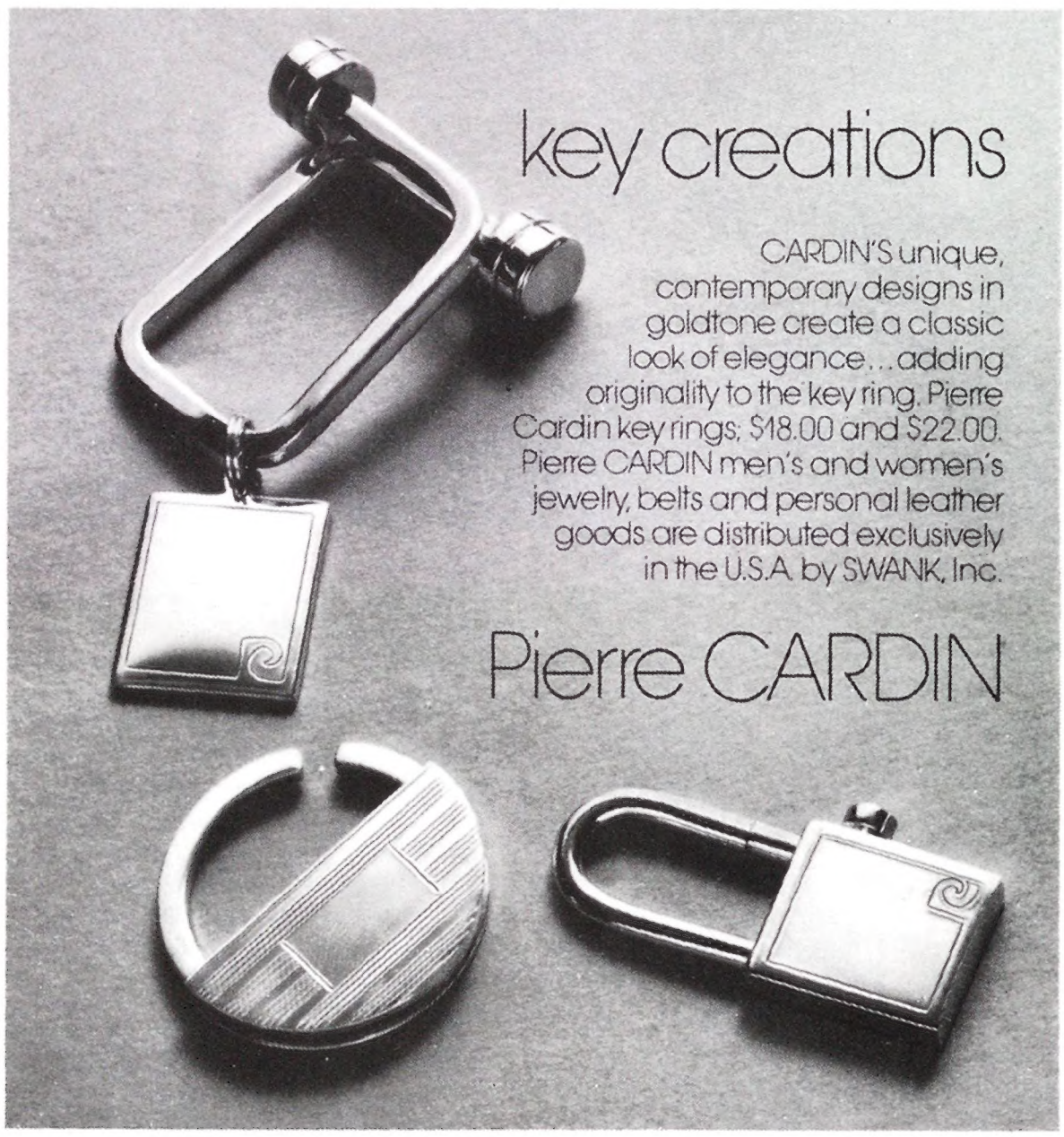
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BY NAOKA NOBATA

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Secretary Ripley's comments

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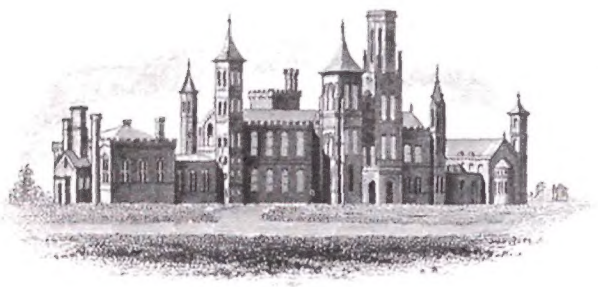

Some environmentalists may fear the energy crisis will undo the advances made, but the need for conservation and the laws remain

It is alleged these days that the bloom is off the peach, the glow has faded on the horizon, the bright hopes for the future are dulled. Concern for the environment, which emerged as part of the collective consciousness in this country and abroad in the 1960s, is thought to be on the decline these days, now that stern realities of energy shortages have come to take the place of the idle specters raised by the "ecofreaks."

It is assumed that Americans swing, pendulumlike, from one emotionally held set of assumptions to another. It may be that those who lead the protests for "no nukes" in front of utility plants assume that the dread powers-that-be are about to grab at some fancied opportunity to discredit the environmental movement—to turn back the clock all the way to the smog-filled atmosphere, the choking soft-coal pall of the cities of the Western world of the 1870s. Yes, the *Eighteen*-seventies.

History is not measured in ten-year cycles, not even in four-year cycles, as some politicians think. Concern for the environment is well over a hundred years old, as the establishment of Yellowstone Park or the efforts to develop chimney filters will testify. The present-day consciousness of Americans for rational use of resources is grounded in a respect for nature developed through myriad sources—religion, for one; philosophy (from the days of Emerson right on); medical and engineering technology; and an innate love for the land. Such protectiveness is far more than mere sentiment. It produces rational thinking about choices—for oneself, for the future of children, for carrying on.

There is a body of precept, grounded in these assumptions and insights, which has produced laws that will not easily be undone. Let those who will make fun of the snail darter, the little fish that held up a dam. I would not have chosen the snail darter as the optimal symbol of a crisis, a struggle between right and wrong. As usual, the battle may have been joined at the wrong time over the wrong thing. Our acquired skills in captive rearing—in aquaculture, if you will—probably could have circumvented the confrontation in this particular case.

But the fact remains, snail darter or not, that environmental concerns will not go away, nor may the regulations in force be replaced at will or even eroded by design. There must be no politics in the concern for our only home. Man is not likely, even in madness, to bite the hand that feeds him or to set fire to the roof over his own head. The degree to which consciousness in this respect has been raised in the minds of humans everywhere in the world today should be respectfully understood. In India, people have chained themselves to trees so that they may not be cut down. In other places, they have lain down in front of bulldozers. Even in authoritarian countries, protests in favor of preserving nature or natural monuments have erupted where, in other matters, voices were still.

We who are endlessly inventive will eventually capture the power of the sun as we have trodden upon the moon. The riddle of life around us and our preservation of it will be solved as surely as I know, picking peaches off my trees, that bloom—that magical bloom—came for a reason and will not die.

S. Dillon Ripley

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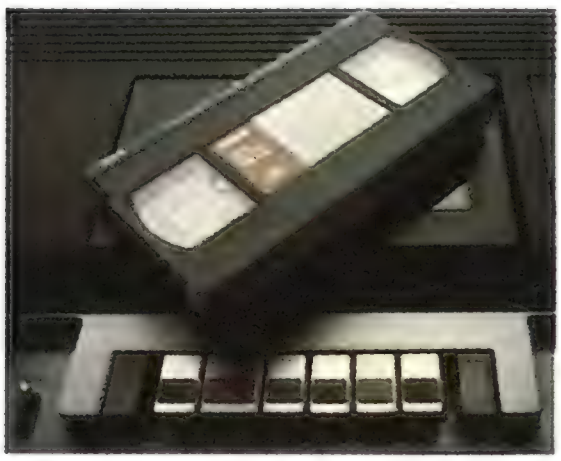

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But 6 hours is just one reason to consider the new SelectaVision 600. A 7-day programmable timer lets you record your favorite shows even when you're away. By touching a few buttons, you can program your selections into the timer and the rest is automatic. The 600 will turn itself on at kickoff time, silently record the game, then turn itself off. When it's time for your second selection, the

7-day memory timer lets you program shows up to a week in advance.

600 turns itself to the proper second channel and starts recording again – automatically. The entire schedule is preset by you up to a whole

SELECTAVISION 600.
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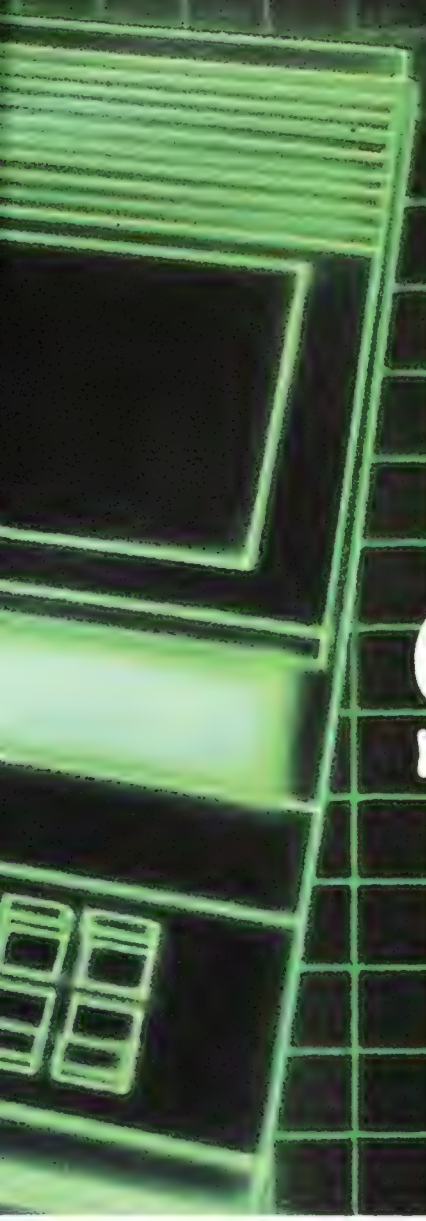

6 hours recording.
7-day memory timer.

week in advance – as many as four different shows or even the same program for seven straight days. And with 6 hours of recording time, you shouldn't have to change cassettes as often.

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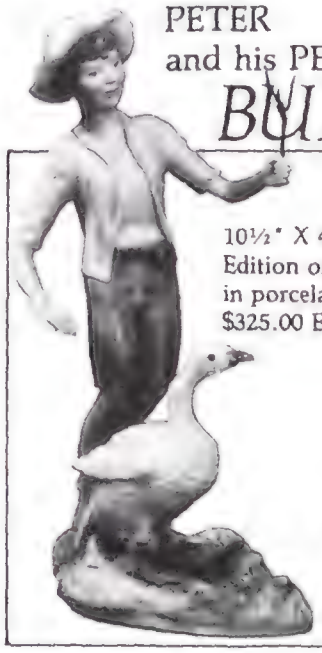

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MONEY BACK GUARANTEE!

Letters to the Editor

Tunisian desert project

Dear Sir: Your August article on the Sahara ecosystem reminds me of my book on resurrecting deserts to make them livable.

As an architect and engineer, I have designed a burrow-type house, which I would sink in the ground—with a family room at the lowest level.

A system for producing distilled water from saltwater consists of a shallow receptacle, with a film of water, over a black bottom. There is to be a vapor-tight

The Dohány Street Synagogue (see above close-up) also has twin

double-glazed cover, with a collector funnel and duct to carry vapor to a condenser bottle. The water is then vaporized, and reflecting mirrors deliver high-intensity solar heat from 9 A.M. to 3 P.M. The collector bottle or chiller is to operate at the dew-point temperature of supersaturated vapor at atmospheric pressure—by using a priming of cool groundwater or with a slight chilling by refrigeration.

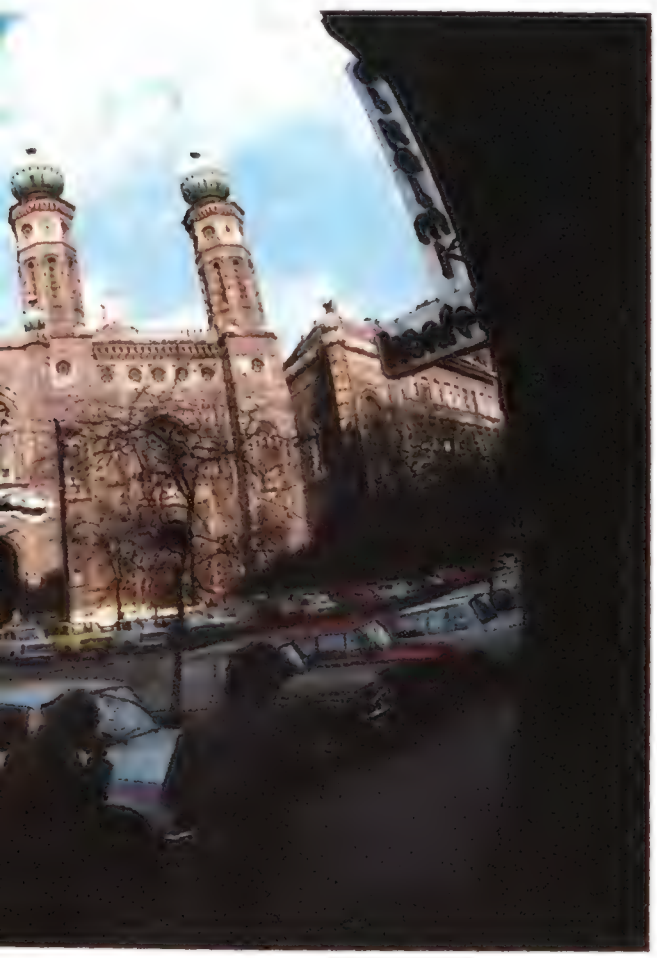
Many animals live part-time underground, and perhaps Man should, too—but with a scientific touch.

Henry E. Voegeli
Wallingford, Connecticut

Budapest wartime ghetto

Dear Sir: Howard Sochurek's article recalls to me the time I spent visiting and studying in the beautiful city of Budapest, but I was surprised to find St. Stephen, the Catholic basilica in Pest, identified as the Dohány Street Synagogue. The large domed structure with the two towers, in the forefront of your picture, is the Bazilika Szent István. The synagogue [see below] is far in the distance to the right.

William J. Novak
Arlington, Virginia



towers like those of St. Stephen, but the similarity ends there.

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Thunderstorms

Dear Sir: After reading Henry Lansford's article, "The frightening mystery of the electrical storm," I believe a recent storm we had in our city developed to the point of producing a microburst. The storm tore through, snapping off treetops, uprooting large trees, spinning cars around and lifting a boat off its trailer.

This storm was being tracked by radar (old type) but did not display a severe thunderstorm "signature." Since the severe downdraft lasted only about 30 seconds, it is unlikely that even the newer Doppler radar would have given sufficient warning.

One recourse is to educate people about severe storms as SMITHSONIAN has helped to do with this article.

David W. Krumbhaar
Greensboro, North Carolina

Dear Sir: I believe the statement in the thunderstorm article that a 1.67-pound hailstone sets a U.S. record is in error.

In 1911, a much bigger one fell at Pipestone, Minnesota. It was six by eight inches, weighed five and a half pounds, and it fell through the skylight of an office building. According to the *Pipestone County Star,* "In places the hail was heaped up like snow in winter, and north of the city there was a strip where the hail lay almost knee-deep upon the ground."

George H. Patterson
Sun City, Arizona

There have been many reports about huge hailstones, but the National Weather Service credits the 1.67-pound one as the largest to date. Ed.

Dear Sir: As a National Weather Service (NWS) employee, I would like to point out some of the deficiencies of our operational warning program affecting my ability to give useful weather warnings.

Traditionally, the Weather Bureau has been managed by research-oriented scientists. The focus is not on application but on pushing back the knowledge frontier, resulting in long periods before advances filter down. For example, weather satellites were launched in the early Sixties, but it wasn't until 1974 that written summaries were available at my level.

The NWS delegates many meteorological tasks to other agencies. For example, 90 percent of the pilot briefing is done by

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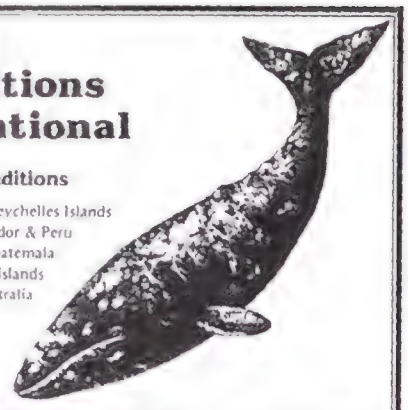

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D. J. Kava
Port Arthur, Texas

Czarist art

Dear Sir: S. Frederick Starr's article, "The little-known Russian art of an Imperial era," gave great pleasure to all of us who worked so hard in organizing the exhibition. A number of people deserve substantial credit: Lyndel King, director of the University of Minnesota Gallery; John E. Bowlt, who wrote the catalog essay; Frederick Jackson, director of a consortium of Midwestern universities to which the exhibition traveled before it came to Smithsonian's Renwick Gallery.
Barbara Shissler
Special project director
for the Russian Exhibition
Minneapolis, Minnesota

Dear Sir: There was one flaw in the article on Russian art—it opened in St. Paul—not Minneapolis.
Louis N. Sarbach
St. Paul, Minnesota

Raccoons

Dear Sir: A. B. C. Whipple's article, "The raccoon life in darkest suburbia," was of particular interest to me and a number of members of our historic First Church in Belfast, Maine, in view of a raccoon happening which took place here early this summer. A pair of these creatures drilled through a stone foundation, eluded a variety of traps baited with peanut butter and stale fish, and climbed between the walls of the organ loft. They were finally caught, but not until they had done $995 worth of damage.

Whether it was a distaste for organ music or a taste for salt in alloy pipes is still debated by our church members.
Roger M. Woodbury
Belfast, Maine

Dear Sir: Our simple solution to the banging garbage-can lid was simply to place an old automobile tire on top of the lid. In the past five years no raccoon has been able to move the tire.
Charles Dauksis
Norwood, Massachusetts

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Dear Sir: We have some advice for A. B. C. Whipple: never challenge a raccoon.

Now our unsecured garbage kettles are stuffed with rinsed-out tin cans, junk mail and an occasional handwritten recipe for leftover raccoon. Now our edible garbage goes back into old TV dinner trays which are, in turn, set on a concrete footbridge just back of the house. When spillage occurs, the creek floods wash it off to some other part of wild, wild suburbia.

So far, we've been lucky. The raccoons seem to enjoy our kind of garbage but, should they ever refuse it, all we have to do is stop buying whatever it is they don't like. Any fool can outwit a varmint if he really sets his head to it.
Ted Frischmuth
San Antonio, Texas

Dear Sir: I hooted when I read about the raccoons who ate in courses. I can't help loving the little bandits.
Idamae Brooks
Long Beach, California

Dear Sir: The Connecticut raccoons may not have eaten Whipple's tomatoes, but it is a different story here. This year every one of our tomatoes has shown large gashes as they became about ready to pick. We consulted our county agent, whose immediate answer was, "they are being eaten by raccoons—they just love tomatoes."
Edmund S. Mortimer
Delmar, Maryland
Raccoons are very adaptable and seem to adjust their appetites to the bounty of the land wherever they are. Ed.

Dear Sir: Friends of mine in suburban Baltimore have hosted a gang of raccoons for several years; the count last night at the free-lunch counter was six. Perhaps they began this service on the theory "if you can't beat 'em, join 'em," but I expect it more likely that their love for all living creatures made them take these fascinating animals to their hearts. Apparently, these raccoons don't take time off for a winter's nap; they trundle up out of the woods year-round as regularly as twilight comes. The hosts are now providing 12 large loaves of bread a week in addition to other goodies.
Velva Grebe
Lutherville, Maryland

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Cushing and the Zuñi

Dear Sir: I find that John Sherwood's article on Frank Cushing both overpraises and underestimates his work. I do not believe we owe "our concept of cultures" to Cushing unless the materialistic view Cushing offered of Zuñi culture is the one we hold today. I would much prefer to draw attention to his theories on the human hand and the form of handicrafts, or to his pleasantly written versions of Zuñi folktales.

I wonder how the Zuñi feel about having the old idea of the curious and quaint savages revived in this article. Possibly in these times of Native American rights movements it is comforting to believe that the primitive, interesting aborigines of the Old West are still there, waiting to sell dolls and rugs to tourists.

Richard M. Swiderski
Assistant Professor of Anthropology
Bridgewater State College
Bridgewater, Massachusetts

According to Joan Mark, Associate in History of Anthropology at the Peabody Museum, Harvard: "Frank Hamilton Cushing was the first to formulate and make use of the anthropological concept of culture. He was, in Lévi-Strauss' words, 'one of the great forerunners of social-structure studies.' He was the first professional anthropologist to go and live with the people whom he wanted to study." Ed.

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Dear Sir: Had Patrick Ryan been pressed behind an old-fashioned push mower at an early age and been held responsible for the manicuring of a three-acre parcel through high school years, he would see the therapy gained to be the equivalent of a tap dance on quicksand.

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Phenomena, comment and notes

Subatomic particle flavors, monster refraction, anatomy of schizophrenia and self-awareness of chimpanzees

The last pillar upon which rested the human claim to being unique, somehow a quantum leap beyond the rest of creation, has been dealt a severe blow by a man who otherwise seems rather peaceable, judging from his writings in *American Scientist* (Vol. 67, No. 4). Gordon G. Gallup jr. heads the psychologists at the State University of New York in Albany and, when time permits, he looks philosophically and scientifically into the minds of chimpanzees, those creatures who have already battered down the other pillars of the aforementioned anthropocentric edifice.

Toolmaking? Chimps can do it.

Language? Give them a few hand signals or plastic chips and chimps use that, too. It seems that grammar is something they've simply been waiting for the tools to employ (SMITHSONIAN, April 1979).

Certain aspects of their blood are indistinguishable from human blood. Genetically and biochemically we are as alike as "sibling species of organisms."

OK, OK, says the die-hard chauvinist whose self-respect rests on the need to be above the other marvels of evolution. But we humans have a concept of the self. We are self-aware and *no* other form of life can make *that* claim.

Professor Gallup has reached another conclusion and he did it, quite literally, with mirrors. Simply stated, the idea is that if you look at your own image in a mirror and say, "that is me," then you

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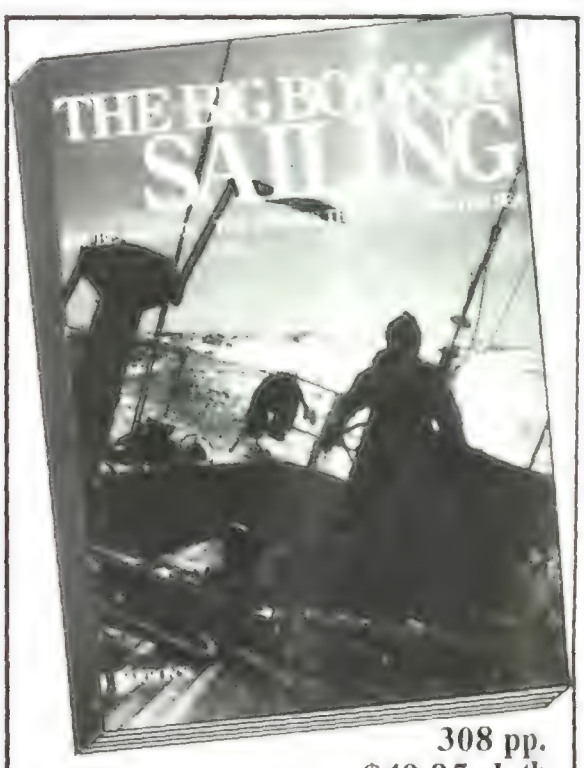

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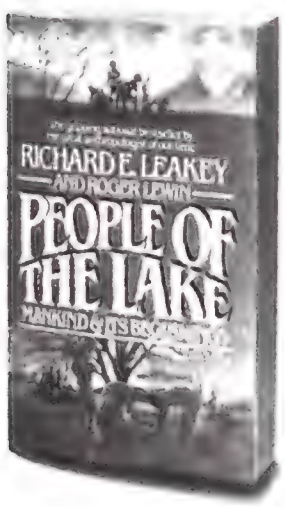

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have to have a sense of who "me" is as opposed to other similar individuals.

Severely retarded children and some schizophrenics cannot make this connection, it turns out. Nor can most animals that Dr. Gallup has studied. Most animals, seeing themselves in a mirror, react as if the image belonged to another of their kind. Some, such as goldfish and parakeets, says Gallup, prefer mirror images to actual members of their kind.

But stick a mirror in a chimpanzee's enclosure and, in a very short time, the occupant stops making social gestures and begins to perceive—somehow—that the image there is "me." The chimp will begin to use the mirror just as you and I would, examining the inside of its mouth for extraneous material or grooming an eyebrow or, in a moment perhaps of whimsy, making faces.

Realizing that folks might quibble with this interpretation, Gallup carried the investigation one step further. He took mirror-trained chimps, anesthetized them, painted red dye on parts of their faces they couldn't see directly, and removed their mirrors. Then, when the chimps woke up and their mirrors were replaced, the chimpanzees (to a man, one wants to say) took a squint at themselves, immediately noticed the red dye and began to finger it exploratively.

QED, right?

There's some evidence that orangutans react similarly. Lesser primates than us apes don't, says Gallup, but he thinks it would be fun to check out whales and dolphins and elephants. I'd be willing to bet on elephants, but then I was deeply influenced by Dumbo when I was a kid. Until I got used to mirrors I thought I was a baby elephant. Didn't everybody?

An anatomical problem

Speaking of schizophrenia, which alert readers will recall we were, tangentially, this disorder is now being examined from a different angle—an old, discredited angle that has received a new lease, thanks to a technological advance. Writing in *Science News* (Vol. 116, No. 2), Joel Greenberg begins with a definition of the affliction in question: "a collection of symptoms including loss of touch with reality, hallucinations, thought disorders and an outward lack of emotions."

In recent decades the solution to schizophrenia has been sought in brain chem-

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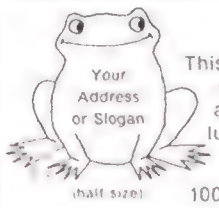

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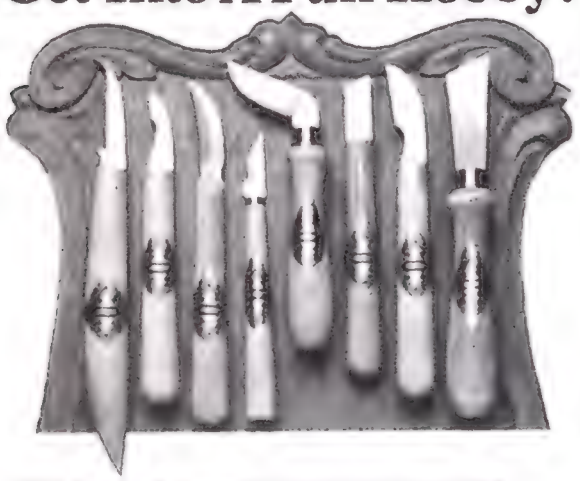

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istry, and chemical agents—notably dopamine—have been suggested as the culprits. Before the chemical-connection era, scientists noted many anatomical abnormalities in schizophrenics, including abnormally large cerebral ventricles, the large cavities in the brain. But the technology wasn't around to easily measure these abnormalities and thereby demonstrate this to anyone's satisfaction. Instead, there were breakthroughs in chemical techniques, and, with the development of drugs to treat schizophrenics, interest in the anatomy of the illness nearly disappeared. Now this may have changed since we've got computed axial tomography (CAT), which means brain scan to you and me.

And brain scans show that schizophrenics do have larger-than-normal cerebral ventricles as well as other problems.

In one study of 63 chronic schizophrenics done at the National Institute of Mental Health, 40 percent had ventricles larger than any in a control group and more than half had larger ventricles than 95 percent of the controls. The abnormality is a "mild cerebral atrophy" that does not result from electric shock, alcohol or drugs, but correlates "only with the occurrence of chronic schizophrenia." Whether it is cause or effect is unclear.

Other structural correlations have turned up, too. Normal right-handed people generally have wider right-frontal and left-rear lobes of the brain. This is reversed, reportedly, in children with autism, dyslexia and other similar problems, and there is now some evidence that the reversal is relatively common among those schizophrenics who do not have enlarged ventricles. In addition, the fibers connecting the two hemispheres of the brain may be abnormal in some schizophrenics. Such abnormalities would impair communication between the two hemispheres. Since the two hemispheres specialize in different functions, poor communication between them could interfere with the ability of the mind to operate coherently.

Scientists studying brain chemistry are interested in these anatomical findings because they might explain some of the chemical changes that they've observed in schizophrenics. So now, with the chemists and the anatomists working in the same cranium, as it were, we can perhaps hope for further progress.

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Beware of monsters

There is an awful lot of nonsense abroad that cannot be rooted out of the minds of many: spacemen building the pyramids and other such blather, astrology, biorhythms, all that. But it is not considered foolish these days to believe in the possibility that there is a Loch Ness monster. There is one herpetologist at the Smithsonian—and I assure you the Smithsonian eschews nuts as it would Adolf Hitler —who finds the evidence from sonar data and underwater photography suggestive enough not to rule Nessie out.

So does W. H. Lehn, an electrical engineer from the University of Manitoba, although he warns in *Science* (Vol. 205, No. 4402) that reports of visual sightings of lake monsters (Lake Manitoba's candidate is known as Manipogo) should be scrutinized with extreme care. The vast proportion of Nessie sightings has been made from May through August on days when the water was calm. So Nessie likes calm water in a pleasant season, romantics will counter, or maybe it's Nessie-seekers who prefer these conditions. Engineer Lehn has another explanation. In those months, the loch's water is colder than the air and this, particularly on a calm lake, gives rise to atmospheric-image

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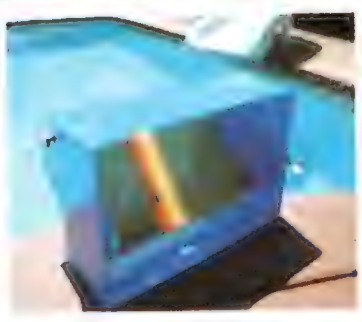

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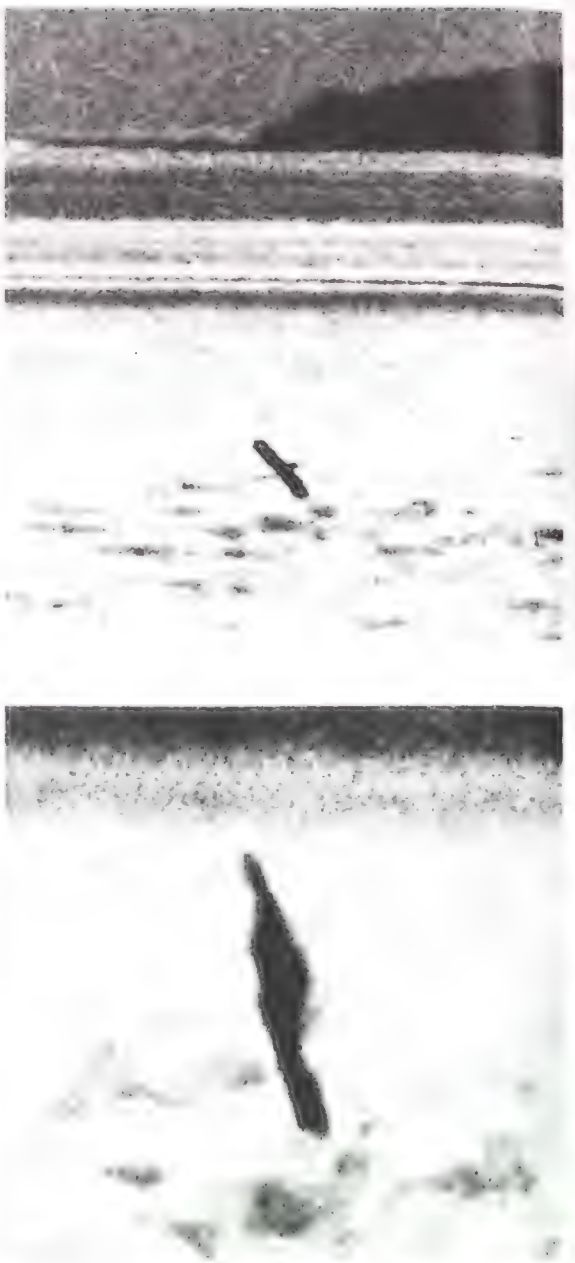

Refraction causes a stick in Lake Winnipeg to change shape; an unwary observer might think it had moved.

distortion, wherein horizontal light rays are refracted, making a stick floating in the water look like, say, a dragon (above). "Further, under the right conditions, inanimate objects can appear mobile . . ." and exhibit wavelike undulations. This is not to say that all "observers" are charlatans or boobs, but merely to caution the predisposed to go to "one more stage of evaluation before accepting such observations as unequivocal evidence."

Science at its best. A bit stuffy, maybe, but calm, reasonable.

A new Oz

What follows may be science at its best, too—I wouldn't have the faintest idea. It concerns physics, a subject which has given me hives ever since a flamboyant physics-for-poets professor set off a hundred or so mousetraps in a glass box, each

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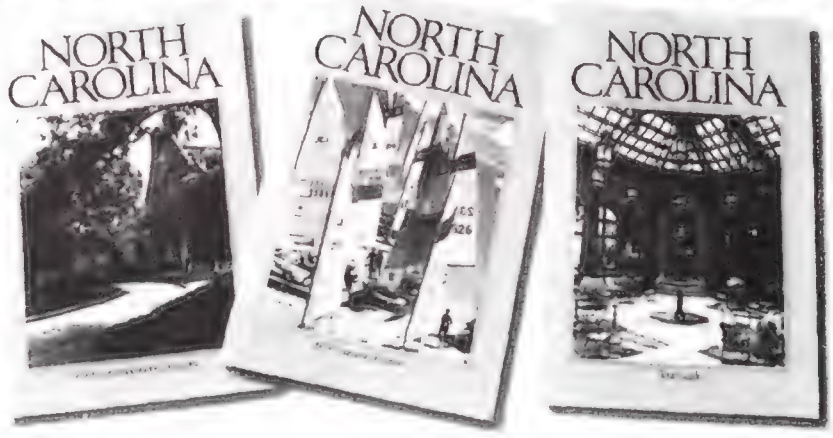

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trap propelling a Ping-Pong ball into a cacophony of confusion, and then remarked on the elegance and simplicity of Boyle's law or some damn thing, and I knew I was lost forever.

I have no intention of explaining anything here because I can't, but the *language* of physics has become so remarkable that I want to pass along the words, clearly those of people desperately seeking to communicate some nearly impossible insight or vision—such as poets. Maybe physics and poetry have now joined as one, as Jacob Bronowski might have thought possible, but I still think the guy with the mousetraps was a nut.

All right, we have *hadrons,* elementary particles, that are made up of *quarks.* Quarks have no structure but they *spin* and they have *color.* They also come in five *flavors,* one of which is *charm,* another of which is *strangeness.* The fifth flavor is *beauty* and this was discovered last year when physicists found *upsilon,* a particle that consists of a beauty quark and its *antimatter* counterpart. Such a combo is called *Quarkonium.*

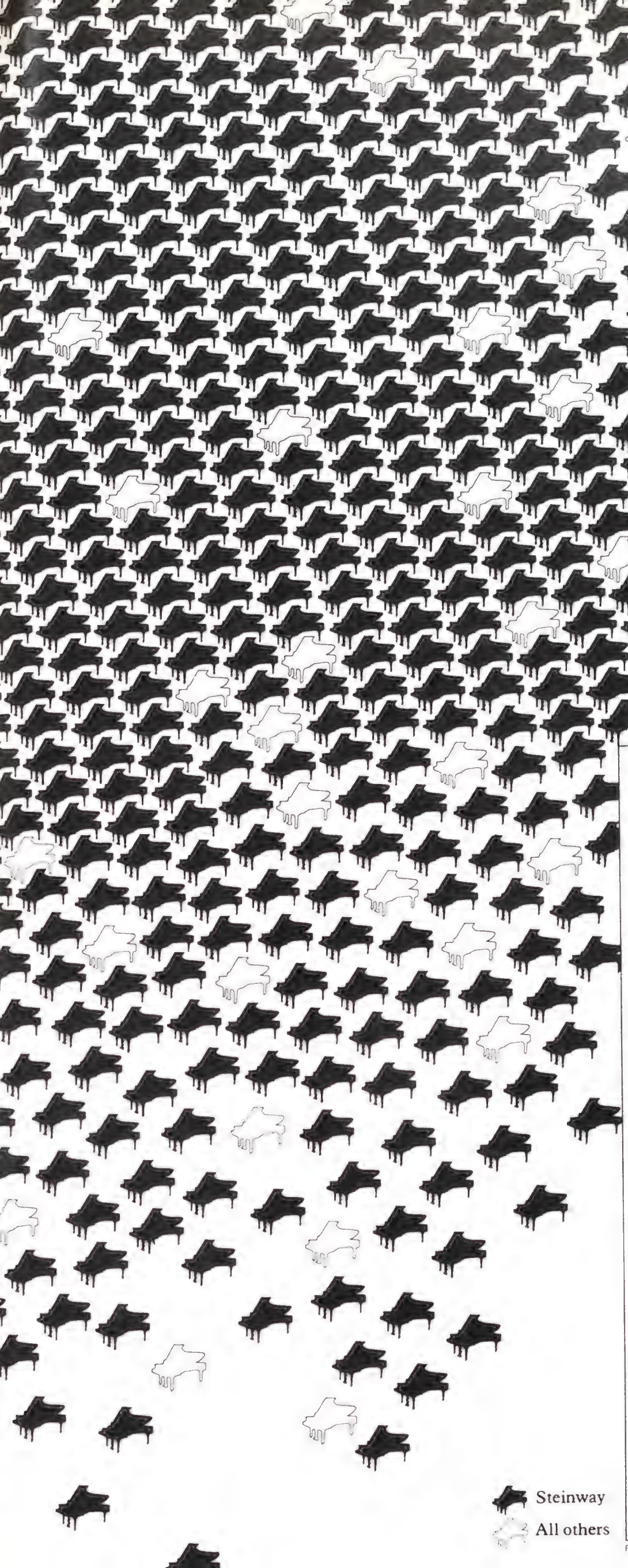
Now physicists have found a particle in which a beauty quark is associated with a quark of another flavor. According to a report in *New Scientist* (Vol. 83, No. 1163), the physicists say they have now found *bare beauty.* The beauty quark, even when bare, I choose to take it, is the heaviest quark yet known.

Getting back to *color,* there are eight kinds to be found among massless particles (neat tricks in themselves) called *gluons.* As I get it, if you have two or three gluons in which the eight colors appear in a symmetric way, they may become hung up in *infrared slavery* and are therefore confined, as is the fate of most slaves, and hypothetically become what the physicists call *glueballs.*

The present theory in which quarks of three different colors form what are called *baryons* (including the proton and neutron out of which all nuclei are made) is in agreement with a wide range of experimental data; what is not clear is whether glueballs exist in nature. In any event, even if it turns out they don't, I prefer them to Ping-Pong balls.

Beauty, I always thought, was in the eye of the beholder, but since a lot of this stuff hasn't ever been seen, one can only conclude that physicists, like chimp psychologists, do it with mirrors.

—JAMES K. PAGE JR.



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The museum currently resides in a block of fine old row houses in the section of Washington called Capitol Hill. That's the area, east of the Capitol, which Major L'Enfant, planning the city, visualized as residential. Sure enough, the 19th century brought a proliferation of dwellings, one of which became the home of Frederick Douglass.

As you of course remember, Frederick Douglass was the former slave who be-

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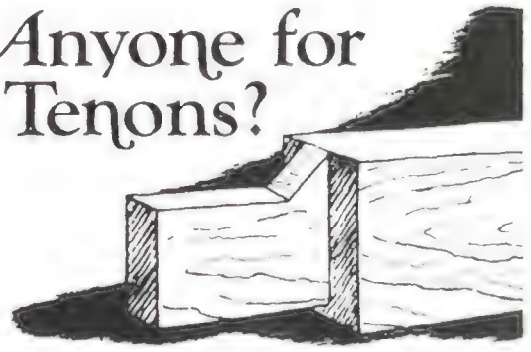

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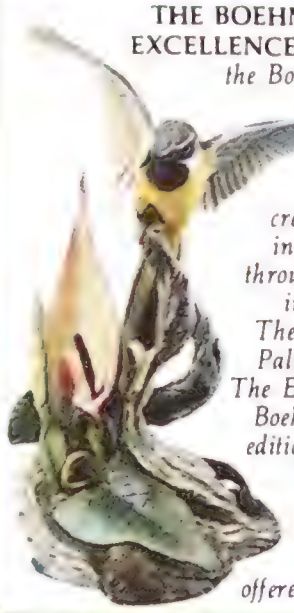

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came, before the Civil War, perhaps the greatest of all abolitionists; who, during that war, was one of Lincoln's advisers and whose trumpet blasts for civil rights took a full century to be heard. He and his family lived in this house in the 1870s.

The Douglass house was bought in 1964 by Warren Robbins, whose likeness appears hereabout. While a foreign service officer in Germany and Austria, Robbins collected a number of art objects which led ultimately to the founding of the museum. His long-honored expertise has been reflected (as writer or adviser) in several SMITHSONIAN articles.

I ventured inside the Douglass house on that breathless dog day, read the notices and explanations in the entrance hall, then was led toward the sound of very young voices raised in enthusiasm. It turned out that a school group of early graders was gathered before the museum weaver, Bobbo (SMITHSONIAN, October 1975), who was at work on a long strip of multicolored material. The strip was extended in front of him and held taut by two strands threaded through two large buttons which he gripped between his toes. Thus he kept the tension that he needed, and could twist the band from side to side with a quick foot movement while he slammed the shuttle back and forth. Neat and fast.

The weaving grew before our eyes, and the kids asked questions: "Where are you from?" (Ghana); "How long did it take you to learn to weave?" (A pretty long time); that sort of thing. They all left at a signal from their teacher and backed into me, behind them, and I backed into a six-foot masked figure and hastily turned around and grabbed it to keep it from wobbling. I instantly confronted a sign that said "Please do not touch," and so I got out as quickly as I could.

A lot of noise came from the top floor where there was an auditorium. Of course I was drawn to it and found myself part of a wildly informal group of adults being taught some African dances by a teacher with an irresistible style. He started out by making us all clap rhythmically—a thing that we accomplished with gradually lessening embarrassment. Then he turned a couple of people loose on two small hand drums and showed them how to supplement the basic pulse of the clapping. Then someone else attacked a big bongo and added a third beat. Then someone (it may have been the instructor

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—I'd lost control of things by then) called out "Hey! Hey!" and on cue we all answered "Hey! Hey!"

Clap, clap, clap, clap, boom-a-ditty, boom-a-ditty, boom-a-ditty, boom-a-ditty, "Hey! Hey! HEY! HEY!" Why, it was the most natural thing in the world to sashay around a bit, swinging your hips and stamping your feet to the throb.

So there we all were: museum people and tough little street kids and smooth black dudes and buttoned-down State Department types and slender black women with wonderful smiles and earnest Wellesley girls—also, suddenly, with wonderful smiles—all clapping and yelling and boogieing around the room. Best fun I've had since my tenth birthday.

The other buildings adjoining the Douglass house hold, mostly, administrative offices and also the archives of Eliot Elisofon, the famous photographer, whose film, *Tribute to Africa,* won much praise and whose color photographs recorded Africa more thoroughly and probably with more effect than anyone else's. Warren Robbins is still boss, of course. This museum is his baby all the way.

I have to go back and look at those 8,000 artifacts more carefully. That first visit just wiped me out. I smiled all the way back to my office through the August heat haze and spent the rest of the afternoon tapping my feet.

While occupied with Frederick Douglass and the original residential status of northeast Washington, I went to look at the wonderfully detailed models of our capital city that stand in the Great Hall of the Smithsonian castle. It was here that I ran across the name of Andrew Jackson Downing, 19th-century horticulturist and landscape architect. He designed the grounds for a number of notable American houses, including the White House and the Capitol. He also laid out a concept of the Mall—it would be a vista of "natural" clumps of trees, with, along one edge, the old canal that has long since been covered over. The canal would have several decorative bridges crossing it.

Downing also landscaped the grounds for our castle, so it's fitting that a small memorial to him should be found in the little patch of garden that lies outside the castle's east door—where the Tourmobile stops in summer. It's a marble urn, standing on a plinth which has inscriptions on each of its four faces.

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One face describes, rather bleakly, the circumstances of Downing's death. He was lost, it says, in the sinking of the steamship *Henry Clay* in 1852. Two adjoining sides of the plinth bear bits of appropriate verse, all suitably sentimental in the mid-Victorian manner. The fourth face also carries some writing, but you can't read it, at least not while six-foot cannas are growing profusely right up to it.

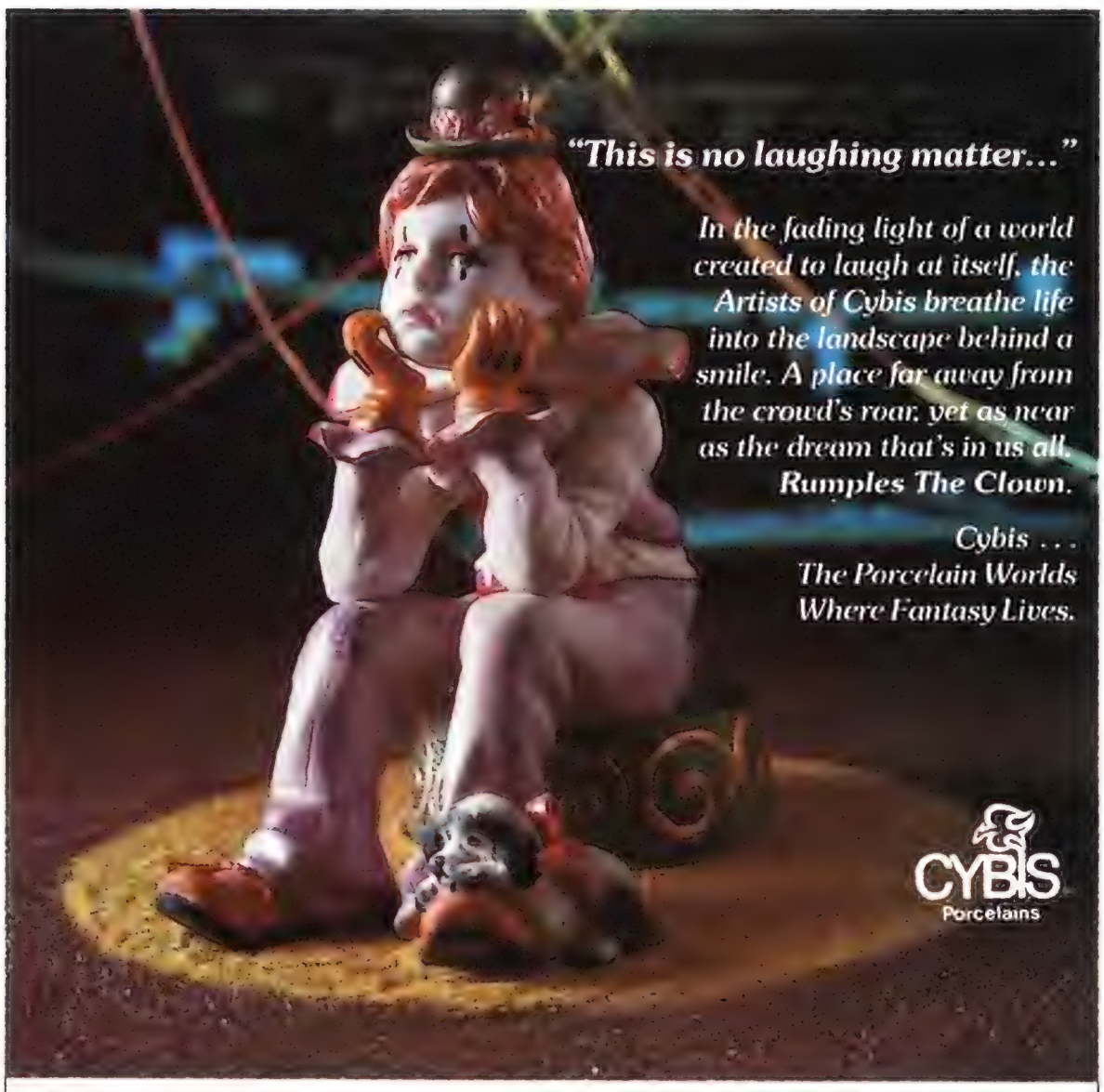
The whole memorial seemed a little tantalizing. I looked up Andrew Jackson Downing and found that the riverboat *Henry Clay* was taking him from the old Hudson River town of Newburgh down to New York. Off Yonkers, the skipper spotted a rival vessel and, as was almost inevitable in those days, got involved in a race. Result: fire erupted on the *Clay*.

Many passengers panicked, apparently, but one very gallant gentleman got as many of them as he could into the water, with deck chairs and other odd bits of furniture to hang on to, then jumped in himself. But once safely off the vessel, this man swam back to rescue others who couldn't swim. And that was the last seen of Mr. Downing alive.

Our horticulturist, Jim Buckler, promises me that he will copy off the inscription that his cannas hide and let me see it. But impatiently I returned to the plinth to crane around the flowers and try to read a word or two. And while I was at it, veering off only when a guard gave me a suspicious glance, I noticed a bumblebee "doing" the cannas, one by one.

I can take bumblebees or leave them, under most circumstances, but this one enchanted me because he was plastered. Bombed into oblivion. He would stagger into the blossom of one canna, disappear for a moment, and then come lurching out, groping for the swinging doors, as it were. Off he'd go to the next blossom, tacking from side to side, stumbling into stalks and leaves—obviously the lamp-posts and hydrants of his fragrant world. In again he'd totter, and out he'd reel, helped along, perhaps, by a peevish bartender. Lord knows what they were serving him.

And so he made his way, presumably, homeward, hiccupping through the stalks and leaves from one dimly lit haven to the next. I watched, and guessed what he'd say to his wife: "Honey, ish a *jungle* out there!"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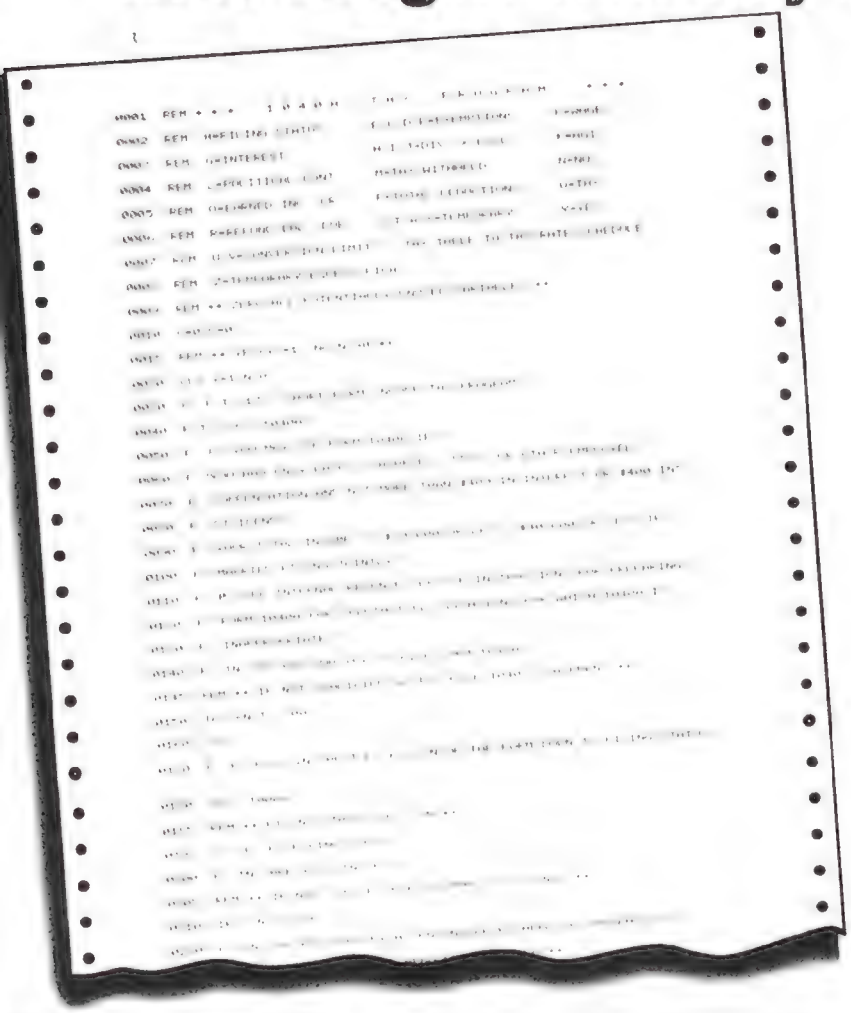

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Flying when plastered is something only a bumblebee should do. But perhaps the wildest flying that sober human pilots have ever done was in the barnstorming days after World War I. Get this: "The upper ship would overtake the lower one with the ladder swinging from its wing tip, and I would reach for the last rung. Then it was only a matter of hanging on, because by that time the other ship was out from under you, leaving you in space. It was quite exciting. One time the ships came too close, and to keep from being hit I threw myself down on the wings and lay with my shoulder over the aileron. The other wing from the upper plane was not more than two feet from my face. By that time they started to separate. I grabbed for the ladder and got hold of the center part of it, but it so happened that the lower end of the ladder got caught between the aileron and wing of the lower plane. There I was, hanging in the middle of the ladder, and they were jerking up and down, trying to get loose. Finally, half of the aileron was torn off the lower ship and I climbed up. . . ."

That is part of the reminiscence of Duke Krantz, a wing-walker and plane-changer with a flying circus of the 1920s. It is quoted in a remarkable new book, *The National Air and Space Museum,* which is about (guess what) the National Air and Space Museum, but which goes into deep and entertaining detail about the backstage events that produced our displays and that add a vastly entertaining dimension to them.

The book was written by C. D. B. Bryan, a skillful and entertaining aviation expert, and is being published by Harry N. Abrams and distributed to Associates by our own Smithsonian Institution Press. You may have read a lot about the museum, but you will still chortle over such items as the meticulously translated memoir of the Marquis d'Arlandes, who, with Pilâtre de Rozier, first got into the air in a hot-air balloon—the first time that man had ever got off the ground anywhere. " 'We must descend,' I repeated to my companion. He looked below.

" 'We are upon Paris,' he said."

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COURVOISIER VSOP. THE BRANDY OF NAPOLEON

By Joshua C. Taylor

A poignant, relevant backward look at artists of the Great Depression

More than a decade of economic deprivation changed the face of American art in ways surveyed by Smithsonian museum exhibitions

National Collection of Fine Arts

On October 24, 1929, the word "crash" took on a whole new meaning in America; not the noisy collision of two resistant bodies but the devastating collapse of the best of all promising worlds. The seemingly unshakable belief that the economy could move nowhere but up, up and up, with profits for all who were wise enough to join the game, was shattered by a series of rapid blows that wiped out the fortunes of great and small with numbing finality. Before the autumn of 1929, brokers, buying on margin and the mystique of ticker tape were common properties of the public mind—not of just the rich investor. This was a boom that would not bust; the glamour of wealth was welcomed to the public domain. After the crash, ticker tape rapidly became a symbol of bondage and conspicuous wealth, a sign of moral turpitude.

This was much more than simply the collapse of an overly inflated financial structure, far-reaching as the economic failure was. It brought suddenly to the fore a host of doubts and uncertainties that had simmered beneath the bubbling optimism of the booming postwar years. The crash was not the primary cause but the provoking incident that sent American society scurrying to reconsider its roots and question the fundamental nature of what had been considered progress. Neither philosophical detachment nor cynical speculation thrived on an empty stomach.

Although the decade of the 1920s is often fondly regarded—chiefly by people who did not live through it—as a period of carefree licentiousness and stylish tomfoolery, it was in fact a period that ecstatically celebrated the triumph of mind over matter. All preexisting values could be questioned, and were. With a kind of religious fervor, all beliefs were stripped bare under the optimistic assumption that if all mystery were dispelled a new truth would emerge. Criticism—whether literary, artistic or social—could be biting and destructive, as though it were a necessary antiseptic to purge the mind of lingering sympathies and nostalgic attachments. Sinclair Lewis wrote caustic best sellers. H. L.

Many of the paintings done under federal programs during the Thirties were by artists of whom little is known now, but the message in Joseph Vavak's *Women of Flint,* a bleak, realistic view, is obvious.

Mencken could lash out at the "booboisie"—its daydreams and vulgar enthusiasms—with the approbation of a sizable intellectual community. To know about everything and remain committed to nothing was a goal that, on one level, stimulated objective inquiry and on another only vacant pretension. The word "sophistication," once a term of reproach suggesting fakery and irrelevance, was now used in admiration as meaning well-informed beyond the limits of vulgar sanction and middle-class values.

The great visual symbol for this new sophistication was the city with its impersonal structure and its soaring buildings, the creation of Man and yet beyond individual comprehension. Of course there was an intensive interest in people, either turned inside out by the prodding vocabulary of the new psychology or organized into clusters of specimens by the new social science. For sophisticates devoted to art there was the pursuit of those who worked outside the conventional visual bounds: the naive painter, folk artists, children or craftsmen from unfamiliar cultures. At home there was jazz in Harlem to excite the sophisticate and the beginnings of the "Grand Ole Opry" in Nashville, launched on the popular radio waves, to be hailed as an indigenous tradition.

But with all the heady activity and proliferating information about things elsewhere that began to spread through the country with the help of radio networks, newspaper syndicates, newsreels and breathless weekly journals, some sensed that a critical separation was taking place between what one knew about and what one was. To believe in sophistication did not necessarily make a person sophisticated, any more than to believe in the satisfaction of riches made one rich. What is the reality? ruminated Sherwood Anderson. The fields and the houses of the towns or the voices on the radio and the shadows on the moving picture screen? There were economists, too, who wondered about the reality of the fabulous successes of the stock market, but the public was too buoyed up by the op-

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In the National Portrait Gallery's exhibition, James Rosenberg's *Dies Irae* (day of wrath) records the crash; Reginald Marsh's *N.Y. Stock Ex* (right) reflects earlier days of euphoria.

timism derived from a dazzling prosperity to pay heed.

Reassessment came not by choice but by force. With the economic shock of 1929, the world of progress began to collapse. As the results of financial failure permeated the social structure through 1930 and 1931, to survive became a more common goal than to succeed. In the arts as well, creative confidence and intellectual responsibility had to find new foundations.

The artist found himself with few patrons and an uncertain future. The 1920s had afforded him the excitement of exploration and experiment, and the chance to affirm that art had its own standards and the artist his special place. But the place was suddenly lonely, and esthetic experiment seemed out of step with a society trying to survive—an effort artists could certainly understand, since they had rather less to fall back on than tradesmen or farmers.

Three exhibitions at Smithsonian Institution museums just 50 years after the crash are displaying various aspects of the art which was both inspired by the period and was at the same time the result of it. The first, running from September through December 2, "Prints for the People," is at the National Collection of Fine Arts and consists of 66 works of graphic art made under New Deal graphics projects. Then, from October 24 through January 13, in an exhibition called "After the Crash," the NCFA is also showing a selection from its own collection of New Deal works done during the Depression years. The third exhibition is at the National Portrait Gallery (October 24-April 20), entitled "The Great Crash." It focuses on the personalities and events of 1929.

Although there had been some local, city and state efforts to aid artists by allotting commissions, and support as well from private organizations, the artists were still desperate when the federal government first entered the field in 1933. For some years the government had been commissioning sculpture and an occasional mural through the Treasury Department, which was in charge of federal buildings, but there was a long established tie that kept federal commissions within the very conservative circle of artists with whom the National Commission of Fine Arts in Washington found spiritual kinship. These were not the artists now struggling to be heard.

One dissident artist well enough placed socially to have direct access to the President was George Biddle, who wrote President Roosevelt in the spring of 1933 suggesting that the United States embark on a program of commissioning murals similar to that inaugurated by the Mexican government some ten years before. The idea found support in the Treasury Department, where Edward Bruce, both an artist and financier, took on the task of realizing it.

Despite protests from the heretofore guardians of officially approved art, the Commission of Fine Arts and its cohorts, and despite reluctance on the part of some government figures who thought art was frivo-

Both: National Collection of Fine Arts

William Gropper's *I Cash Clothes* is a somewhat gentler view than Boris Gorelick's lithograph, *Case No. ---* (both in NCFA's "After the Crash").

All: National Collection of Fine Arts

Technique of Douglas Wilson was sophisticated but subject, *Out to the Street Again,* was realistic.

lous at a time of economic crises, a project was under way by December 1933. Funds came from the emergency Civil Works Administration, and a Public Works of Art Project with 16 regional centers across the country was hastily organized under the Treasury Department. Within two months some 2,400 artists were busily at work, paid by government salaries ranging, on an average, between 30 and 40 dollars a week. By the time the PWAP had slowed down and come to a halt at the end of April 1934, more than 3,700 artists had been employed in just about every conceivable area of the visual arts. Among the more than 15,000 works of art were 400 public murals, very few embodying the polite allegorical benevolence smiled upon by the Commission of Fine Arts.

In fact, to judge from many of the murals and the carefully selected exhibition of more than 500 works shown with much fanfare at the Corcoran Gallery in Washington in April and May 1934, the tenor of American art had changed. Two kinds of art were notably absent. There were no lovely ladies masquerading as history or moral virtues, or radiating the tasteful charms of expensive living, nor was there much in the way of academic nakedness or artful fabrication.

Equally missing were abstract bursts of color and form or the spare geometry of the international world of modern art. This second lack was not wholly a matter of the artists' choice. There was both tacit and overt indication that "experimental" modern art was not wanted at this delicate moment in artistic history. Although this restriction angered some artists, their number was small because, for the most part, artists were no more in the mood for highly personal abstractions than they were for paintings of elegant ladies.

One major problem never was completely solved. By what criterion would the government decide on whom to support? Would the decision be based on need or on the quality of the artist? If quality was to be the criterion, how and by whom was it to be determined? Over the ten years or so of the various federal projects in support of the arts, no simple formula was ever hit upon. Possibly the lack of a single principle was beneficial in the long run.

The Treasury Department, which, after the brief initial program, organized its Section of Fine Arts that lasted from 1934 to 1943, made an effort to operate on a principle of quality. However, when some of the funds were allotted from relief sources, the Department was forced to initiate a Treasury Relief Art Project (TRAP) for artists in need, although the administration still tried to be selective. But by far the largest program in support of artists came under the Works Progress Administration, a measure to aid the unemployed created in August 1935. The Federal Art Proj-

Dr. Taylor is the director of the National Collection of Fine Arts and the author, most recently, of The Fine Arts in America.

The great drought of the Thirties delivered another blow to a desolated society, and the migration of so many farm families often left behind a wasteland. This is Alexandre Hogue's *Dust Bowl* of 1933.

Another kind of desolation, but no less compelling, was a vivid theme of artists who concentrated on the urban scene. This is Mitchell Siporin's *Back of the Yards,* its message clear, painted in 1938.

Both: National Collection of Fine Arts

Born in Nova Scotia, Boardman Robinson lived mostly in the United States, painted *Going West -- 1933.*

ect of the WPA was headed by an able museum man, Holger Cahill, very much a part of the New York art community and not at all appalled by the idea that art was of many kinds and should appeal to many kinds of people. Those to be hired under the FAP had first to be on relief. Once accepted as artists by the administration, their need was the only criterion for employment.

What was the temper of this art that grew and found patronage during the Depression years? There was no simple style any more than there was a central theme. Some works reflected soberly the sense of despair and disillusionment occasioned by the Depression itself. When the city appeared as theme in such paintings, as it often did, it no longer soared but seemed forlorn and abandoned, the silent enemy of the people who lived in it. The unemployed themselves were often the subject, shown in a simple state of being rather than doing. The hurt of abandonment was prodded by some painters like a sore tooth, as if in so doing they might find the source of a new positive human consciousness in the depth of disillusionment.

But this kind of art by no means dominated the Depression years. Most artists painted a rather benign picture of contemporary life. There was little or no bravado painting with brilliant technical display; pictorial eloquence in the 1930s was considered a mark of callousness and superficiality. A carefully maintained technical stammer suggested that the artist had more to say than the brush could articulate. If one were to discern two major strains other than the silent, melancholy reminders of Man alone in an unpromising world, they would be the optimistic celebration of rural America and American traditions, and the pointed indictment of the social system and a strong advocacy of its change. One tendency was no less figurative or more abstract than the other, yet they were irreconcilably opposed.

Some artists had begun to take solace in the rural image well before the crash. Already they had sensed an uneasiness with the urbane optimism and experimental freedom that had dominated the 1920s. They wanted to formulate a symbol of unified reality that shut out the destructive incursions of too much knowledge of too many things. With a long American tradition that held the rural to be good and the city to be bad, a retreat to the farm seemed a safe return to the American way—in spite of the fact that more people now lived in the city than in the country. In the very years that the federal art projects were being formulated, Thomas Hart Benton, John Steuart Curry and Grant Wood, with their paintings of American daily life and legend, were being hailed in the press as the founders of a heroically American school. The hullabaloo in the press—often couched in extravagant terms —ultimately proved damaging to the reputation of the artists, yet it was clear that many of them across the country found satisfaction in being obsessively local, and many federal administrators encouraged them in their obsession. Local histories were compiled by the Writers Project, folk art was recorded, and in painting a kind of studied mediocrity too often became the accepted badge of a local style.

Edward Millman studied with Diego Rivera, evidence of whose influence can be seen here in *Flop House,* painted in 1937. Millman painted many murals, and was director of WPA art projects in Illinois in 1935.

This reflection of rural—or even urban—complacency was anathema to the artists who saw the despair and confusion of the period as the result of a flawed social system. From the very beginning of the federal projects these artists proved troublesome to the earnest administrators who were eager not to alarm the always doubting politicians. They identified themselves not with the ideal farmer but with the unionized laborer, and found in the identification a new impetus for their art.

Rather than simply representing the grim conditions of the working man, art should, they believed, evoke a desire for solidarity, making the viewer a partisan in the struggle against an oppressive social system. What the artist was protesting often was less clear than the emotional involvement in an act of protest, since the expression of striving has deep human appeal quite aside from its political application. But many were clear about their political beliefs and, following the lead of their Mexican colleagues, looked upon mural painting and printmaking in particular as means for political persuasion. Politicians were alarmed. Artists in the United States had never before challenged anything other than other artists. Clearly art, with the support of the government, was overstepping its proper limits, which in the minds of many still had something vaguely to do with the good, the true and the beautiful. But whether the artists joined John Reed clubs and the Communist Party out of political conviction, or because it seemed the only way to integrate themselves and their art with their society, they had no intention of being frightened back into a secure artistic haven remote from the problems of their time.

As it happened, the political solution that seemed so promising in the early 1930s proved disillusioning by the end of the decade, but the artists had by then developed a sense of themselves as responsible mem-

bers of a broadly conceived society and could now make their contribution as artists, not as political propagandists, without feeling isolated. It is worth noting that many of the strongest artists to emerge in New York after World War II had not only been supported by a federal program but had been involved with an art of social expressiveness.

It would be pleasant to record that the vast amount of work produced under federal aid—murals, paintings, sculptures, graphic arts, crafts, and so on—remained to serve as the foundation of an expanded world of American art, but that was hardly the case. When the WPA art project was closed down in 1943, works were scattered, thousands were destroyed, and even records disappeared or were left in confusion. Society had moved into a new phase.

With the thrust of activity occasioned by the war, memories of the struggling decade of the 1930s were pushed aside, almost with embarrassment. Postwar art burst upon the country with astonishing vigor as if it had sprung full grown, and its immediate past was scorned. The newly popular architecture had no place for murals or sculptured porticoes. Regional preoccupations seemed naive and backward in the international view of the postwar generation. As for the artist as an advocate of social change, the hysterical anti-communist activity in Congress served as a bitter denouement to a period of social idealism.

But in recent years the hard-won accomplishments of the Depression decade have begun to assume new importance to the contemporary eye. Their expressions of humble joys and sorrows were serious and unfeigned, as were their concern for social justice and unqualified belief in systems that would save the world. The wholeness of purpose is again to be envied. After a generation of stark, unpainted walls, even the despised murals that have survived—and some are only now emerging from behind curtains and layers of whitewash—provide a refreshing change in their lack of sophisticated purity. They seem innocent, in their way, even though they are the product of one of the country's grimmest moments. Possibly there is consolation at a moment of economic uncertainty in this contact with an earnest past that shared a distrust in exclusive esthetic doctrines.

Over the past half-dozen years projects have developed in various parts of the country to search out and reclaim this new appealing heritage from the 1930s. Fortunately, some of the works from the important first exhibition in 1934 remained in Washington, in agencies to which they migrated after the show, and have been brought together in the Smithsonian's National Collection of Fine Arts, which has also salvaged works from elsewhere, many through a cooperative venture with the General Services Administration. The grime of neglect is being cleaned from paintings so that they can again adorn government offices, reminders of life at an important moment in the American past that is too easily forgotten.

So while the crash marked the end of much, it was also the beginning of even more. The traditional guardians of public taste who held their mandate from the halcyon days of the 1890s and had triumphantly reasserted their claims on the nation's image in the 1920s, found their influence slipping away. Old patterns of patronage were largely gone by the end of the Depression decade. In spite of the heavy administrative overhead thought necessary to direct the federal program—with supervisors, inspectors and multiple juries—artists themselves began to be heard as a social force. They had now met the public in local art centers, argued over their highly visible public commissions, collaborated on the decoration of schools and libraries, and joined universities as "artists in residence." They were recognized members not of "high" society, but of society as a whole. Although in the immense government programs quantity may have blunted a sense of quality, contemporary art had entered the public consciousness and was not likely to retreat once more into a cultural cocoon.

The Depression was a profoundly humbling experience, made even more sensitive by the decade of cultural fireworks that preceded it. But in the midst of their shared despair, the public and the artists—possibly for the first time in America—found themselves on common ground. Through unexpected adversity, the artist had finally found a home in his own country.

Elegance and ironic despair of a World War I veteran intensifies Joseph Hirsch's viewpoint in *Hero*, 1939.

National Collection of Fine Arts

executive health

the report that briefs you on what to watch

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Leonard Hayflick, Ph.D.:

A NEW THEORY ON THE CAUSE OF HEART DISEASE AND STROKES . . .
Vitamin B_6 may be the key.

What new research has revealed that may downgrade cholesterol as the main predisposing factor . . . and why.

PUBLISHER'S NOTE: *Dr. Leonard Hayflick, a member of our Editorial Board, is Senior Research Cell Biologist at Children's Hospital Medical Center, Oakland, California. He is a leading authority on the biology of aging and has won several major awards for his research in this field. In 1961 he discovered a new micro-organism that causes a common form of human pneumonia. He is the author of 150 scientific research papers and books and is presently the editor of several scientific journals.*

—Richard Stanton

Nearly one million Americans will die this year from vascular diseases, that is, those diseases of the arteries that cause heart attacks and strokes. What is more, about 28 million people are already afflicted by vascular diseases. For comparison, this year, a third of a million people will die of cancer, and one hundred thousand from accidents.

It may not be too surprising to learn that vascular disease is the major killer. After all, the heart beats about 100,000 times a day while pumping 4300 gallons of blood through vessels that, if laid end to end, would circle the earth twice! There is certainly sufficient opportunity for something to go wrong.

What is going wrong is that the old causes of death in our youth, mainly infectious diseases, have been largely conquered and we are now living long enough to encounter vascular diseases. We have been advised to protect ourselves by avoiding smoking, sedentary habits, hypertension and high cholesterol diets. But none of these no-no's alone, or together, guarantee a healthy vascular system. Something may be wrong with this "conventional wisdom" and an important new theory

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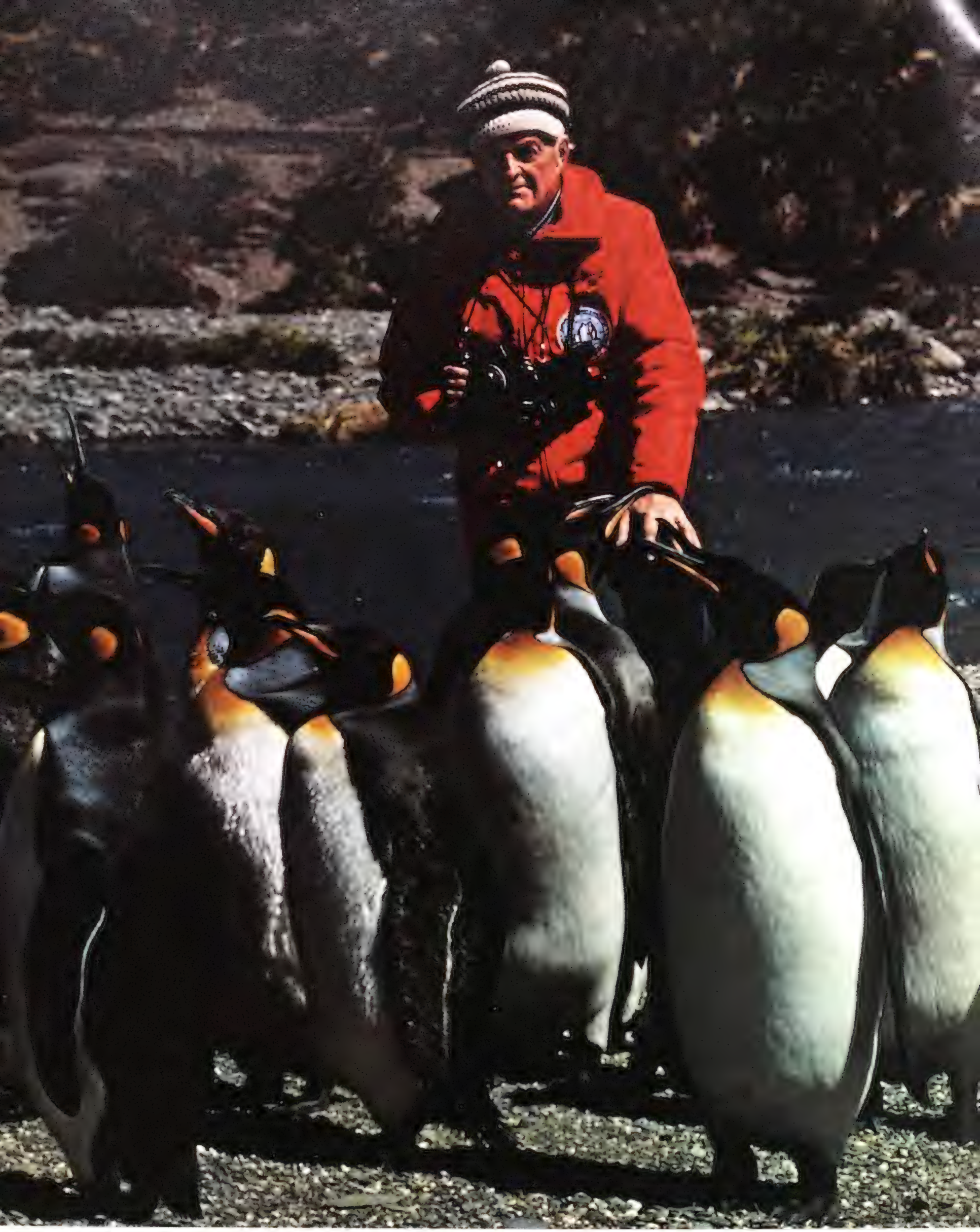


Roger Tory Peterson, who has been known to refer to himself as "King Penguin," meets some of his namesakes on South Georgia, in Falkland Islands. The picture is by his wife, also a penguin addict.

By Roger Tory Peterson

An appreciation of his favorites from 'The King'

Two erect-crested penguins check each other out. They live on islands south of New Zealand.

The man whose name is a synonym for birding reflects on 20 years of penguin watching, and finds they are much more than little clowns

There are 17 kinds of penguins; I have seen and photographed them all in the course of more than a dozen expeditions to the Antarctic and the sub-Antarctic in as many years. However, not all penguins are found in frigid surroundings; indeed, one—the least numerous—reaches the Equator in the Galápagos, a tropical archipelago that I have visited six times. I agree with George Gaylord Simpson: penguins are habit-forming; I am an addict.

"Comical" . . . "Adorable" . . . "The little fellow in the dress suit," and so on. It is tempting to be anthropomorphic about penguins. Using human comparisons, it is easy to think of them as little clowns, ridiculous dwarfs who enliven the circus, waddling across the arena for our amusement. They are far from that. They are not little people dressed in feathers. They are highly specialized birds dedicated to penguinism, a life molded by the cold impersonal sea, harsh climate and crowded colonies in which they reproduce.

The watcher at a ship's rail may mistake his first penguins for small porpoises, zipping in and out of the water as they flee before the prow of the ship. Later, as his vessel passes a drifting ice cake, he may spot a gaggle of chubby, erect, black-and-white figures clustered on it.

No other swimming birds have acquired the technique of porpoising, as performed by porpoises and some seals. Arching above the surface of the water and deftly slipping in again, they travel rapidly to and from their fishing grounds. Slow-motion films of the action reveal that their bills are open when they clear the water; obviously, they are taking in air. Long lines of Adélie penguins stitching the open leads in the pack ice look suggestively like sea serpents as they hurry homeward with craws full of krill.

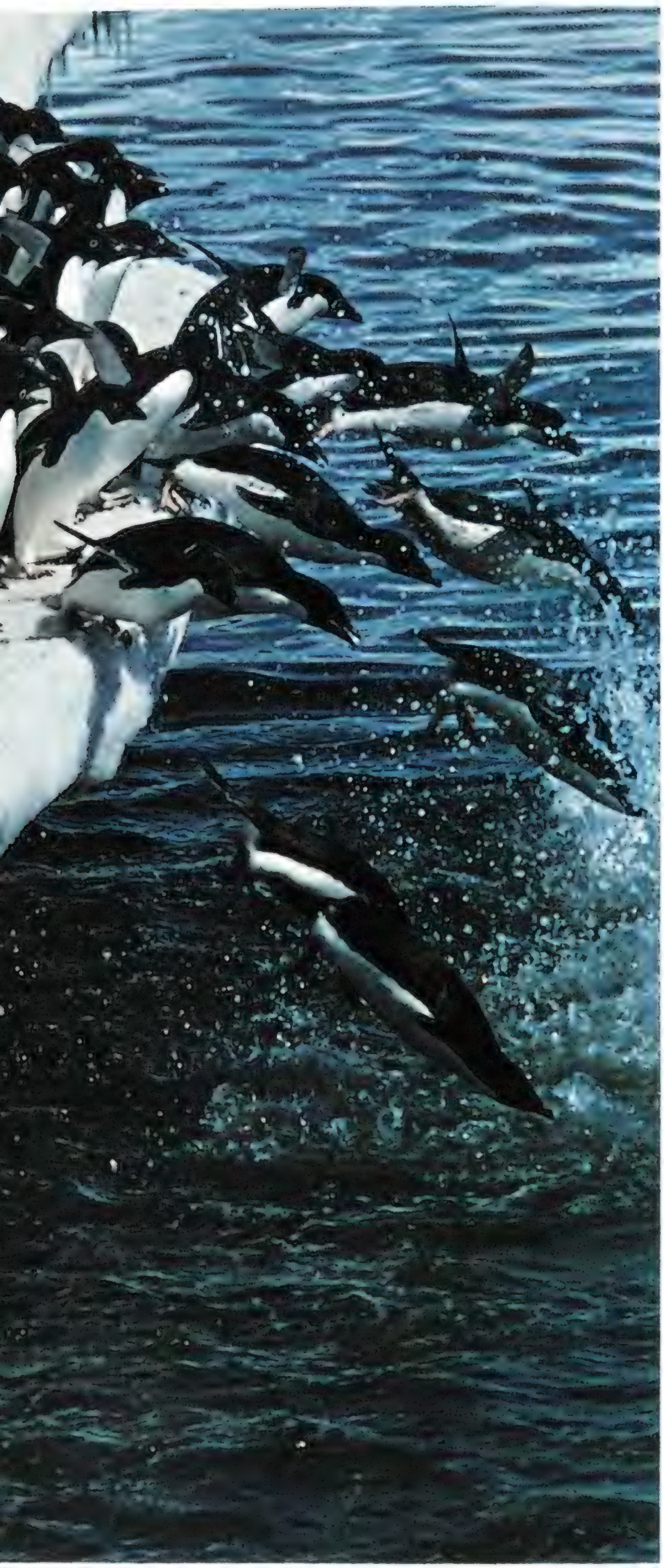
Underwater, they are as clean-lined as any porpoise. The head is pulled back to the shoulders without a break in contour, the feet are tucked under the tail and the wings fly through the water.

So different are penguins from most other birds that no less an authority than Alexander Wetmore (Secretary of the Smithsonian, 1945-52) placed them apart in a superorder of their own (Impennes). And it has been argued elegantly by P. R. Lowe, a British paleontologist, that their ancestors never flew, implying a sepaate line of descent from the reptiles. The consensus, however, is that they descended from birds that flew and at some point lost the power of flight. No other birds are so superbly adapted for an aquatic or submarine life. The water is their element.

The basic pattern of penguins, dark above and white below, has survival advantages. In the southern oceans, dense with plankton, the water is murky, and a penguin's dark back viewed from above as it slips through the depths is hard to see. Viewed from below, its white underparts all but disappear against the sil-

This article is adapted from Mr. Peterson's new book, Penguins, *to be published this month by Houghton Mifflin. Most of the photographs were taken by him.*

Adélies, for many people the archetypal penguins, dive from the ice into the water at Hope Bay on the Antarctic Peninsula. The species was named by French explorer Dumont d'Urville for his wife.



very light that filters down from the sky. This natural camouflage, known as "countershading," serves the penguin well when eluding the leopard seal and the sharks. It matters little that this same bicolored pattern is blatantly conspicuous on shore; land-based predators are not usually found on the islands where penguins consort for breeding.

Anatomically, penguins are peculiar in a number of ways. Their wings have become flippers, stiff, strong and narrow. The bones in them are flattened, but otherwise correspond in arrangement to the bones in the wings of other birds. Some of them are fused or are bound together with tight ligaments, giving the rigidity of paddles. This modification prevents the birds from folding their wings, which therefore hang stiffly from their sides. The feathers clothing them are so numerous, tiny and firm that they bear little resemblance to the feathers of other birds. Early travelers debated whether penguins were fish or fowl.

Air conditioning and thermal underwear

The heating and air-conditioning system of a penguin is superb. The innumerable small hard feathers overlap like shingles or tiles to form a shell that effectively shuts out the cold water, which in the Antarctic may be nearly 40 degrees C (104 degrees F) colder than the body of the bird (a man plunging into the same ice water would die within minutes). Beneath their hard armature, the feathers have downy bases, which trap air warmed by the body and hold it there rather like thermal underwear. For added insulation in cold climates, there are thick subcutaneous pads of fat on the body.

But what do penguins do when it is too warm? There are times when, even in the Antarctic, penguins may suffer from the heat, as on sunny windless days when temperatures are well above the melt point—days when a man may comfortably wear only a light shirt. Penguins ashore may loosen or fluff their feathers to allow warm air trapped close to their bodies to escape, or they may hold their flippers well out from their sides. When they do this, you may notice a pink flush on the underwing, where the vessels, close to the surface and gorged with blood, are releasing heat.

Baby penguins with their furry coats have another way of remaining comfortable on warm, sunny days. They plop down on their bellies and extend their feet behind. While they are thus prostrated, excess heat is radiated from the soles of their feet.

Birds that are airborne—and most are—have bones that are hollow and air-filled in order to achieve buoyancy. To penguins, however, lightness is not advantageous; heaviness is an asset. To dive deeper and stay under longer, they need ballast—solid bones.

The jackass, or black-footed, penguin once numbered in the millions around South Africa. Now only about 65,000 remain.

These little Galápagos penguins live virtually on the Equator. Some taxonomists feel they are not really a separate species.

Crested penguins such as this one form dense colonies in scrubby thickets on Snares Islands, south of New Zealand.

The plumes earned this penguin the name macaroni—used just the way it is in the song *Yankee Doodle,* to indicate a dandy.

An emperor penguin, the largest of all, surveys the totally frozen Antarctic terrain. It will reproduce in dead of winter.

A mated pair of chinstrap penguins go through an elaborate greeting ceremony, pointing their bills up and wagging heads from side to side.

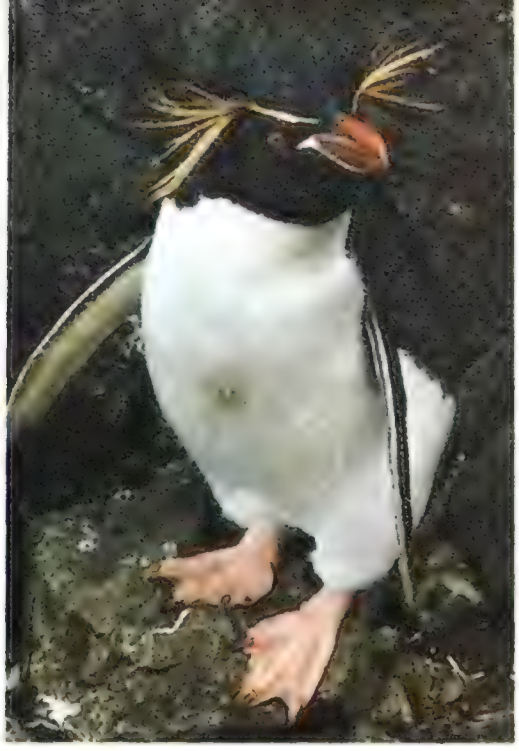
Whereas cormorants, loons, grebes and most other aquatic birds (except the auks and diving petrels) employ their webbed feet for propulsion when they swim underwater, penguins use them only for steering. Assisted by a pointy tail that acts as a rudder, they can change direction in a flash.

Penguins are not bottom feeders, but hunt for food where the shoals of plankton and attendant small fish are thickest—from just below the surface down to a depth of 50 to 60 feet. Usually they surface every two or three minutes to breathe, although the emperor has been clocked at 18 minutes and could probably stay down longer. It also dives to greater depths: a vertical plunge of 870 feet has been recorded at Cape Crozier.

Some penguins feed primarily on fish and squid; others specialize in euphausiids, the shrimplike animals commonly known as krill, which are also the principal food of baleen whales. It appears that the krill-eating penguins, such as the Adélie and the chinstrap, have increased in the southern oceans because more food is available to them; there are fewer whales these days to eat the krill.

A penguin in soft snow can run as fast as a man, or faster, and to speed things up while conserving energy

A gentoo penguin squats on its two eggs at Paradise Bay on Antarctic Peninsula. It is one of the most widespread species.



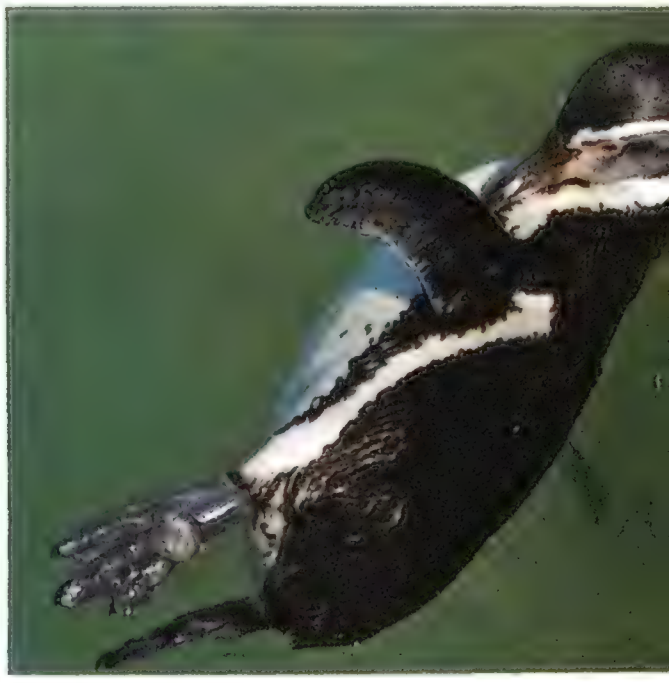
The rockhopper makes its way by leaping with its feet held together, something like a small, peculiar kangaroo.

These little blue, or fairy, penguins were photographed at midnight near Melbourne. They return to burrows at night.

The royal penguin, found on Macquarie Island, south of New Zealand, is a close relative of macaroni, but the two don't mix.

Two Magellanic penguins appear to be nuzzling. They assemble to mate each year in colonies of up to a million.

The shy Peruvian penguin, which nests in burrows dug in guano beds, is losing ground because of fertilizer collectors.



it may toboggan on its belly. Hurrying along with a stride of only six inches is strenuous activity, and an overheated penguin hastening home over the ice will stop periodically and fluff up a bit to allow the excess heat to escape. In the frigid sea, the problem is reversed. By speeding up its activity and zipping through the water at a furious pace, it produces more metabolic heat and thus keeps its body temperature constant.

Because its legs are placed so close to its tail, a penguin is forced to assume an erect posture on land, a doll-like stance. Coming ashore with a bellyful of fish or krill, it may have an almost pearlike shape. Waddling briskly with armlike flippers held well away from its body, it looks, as that well-known penguin watcher, Olin Sewall Pettingill jr., puts it, "like an animated laundry bag."

Penguins may suggest stuffed toys, but they are not meant to be picked up and cuddled; their beaks have cutting edges as sharp as razors, and their flailing flippers can raise welts on unprotected shins. After a summer in an Adélie colony, Pamela Young, a biologist's wife, was so disenchanted by their aggressive behavior and raucous, Yahoo ways, which reminded her of a pack of street-corner delinquents, that she wrote,

Adult Adélie penguin wards off a skua seeking to make a meal of the chicks. Skuas, Peterson says, look like gulls but act like hawks and make short work of chicks left unattended for a moment.

A November blizzard sweeps across Cape Crozier and a group of Adélie penguins incubating their eggs.

"I could hardly bear the sight of the little monsters."

When penguins first met men they trusted them, but that trust was disastrously misplaced. The early explorers and adventurers thought penguins were fit only for the cudgel and the cauldron. When penguins allowed themselves to be clobbered, they were characterized as "stupid"; and when the abused birds reacted defensively, using their beaks and flippers to good effect, they were regarded as "vicious." Nothing in their millions of years on Earth had conditioned penguins to cope with men, and the impact when they eventually met was entirely one-sided.

Birds of a feather flock together. At sea, gentoos stay with gentoos, kings with kings, and rockhoppers with rockhoppers. Swimming swiftly in tight groups, each species exhibits the distinctive behavior of its clan; ordinarily there is no mixing. Penguins undoubtedly recognize their kin by their head markings, and they also reassure one another by cries that indicate, "I am a gentoo"—or a king, or a rockhopper, or a whatever. Should a penguin stray or find itself quite alone, it has a loud contact call, a coarse earsplitting *aark* or *kohrk,* that can be heard over the sea for half a mile. If other penguins of its kind are within hearing, they respond.

Different species of penguin would not be easily distinguished were it not for their head patterns; in-

The penguins are so well insulated by their feathers that not enough body heat escapes to melt snow.

Leopard seal, chief predator of Antarctic penguins at sea, tries to wait out a group of Adélies on a small iceberg. In the absence of penguin colonies, these seals live on krill, small crustaceans favored by whales.

deed, a field guide need show no more. They swim low, often with little besides their heads showing above the water, but this is enough to inform a bird that it is in the right company.

Penguins are colonial, especially those in the Antarctic. Some species form aggregations of a million or more. One colony of chinstraps on Zavodovski Island in the South Sandwich group was reported to number 14 million. The more northerly penguins (Galápagos, Peruvian, fiordland) are the least gregarious; they may nest in rather small groups or even in scattered pairs.

Most penguins lay two eggs, but the two largest penguins, the emperor and the king, lay but one, which they carry on their feet; two eggs would be an inconvenience for them, if not an impossibility. Once, in a colony on South Georgia, I watched a king try to take over an egg that had been abandoned on the mud. It already had an egg of its own, but it tried for half an hour without success to poke the second egg onto its feet. There simply wasn't room for both.

The emperor is the most specialized of all, living out its entire life on the sea ice, or near it, and reversing the seasons by laying its egg in the polar winter, when temperatures may drop to −60 degrees C (−76 F).

The emperor, the most truly Antarctic of the family, is the most hefty and may weigh more than 90 pounds.

By contrast, two of the most northerly penguins, the little blue and the Galápagos, living in sunny subtropical climates, are the smallest, weighing only three and five pounds, respectively.

There is survival advantage in being larger on the polar ice and smaller in warm regions. A large body retains its heat more efficiently than a smaller one of similar shape, because there is less surface area in relation to bulk to release heat into the air.

Of all the penguins, the Adélie, named by French explorer Dumont d'Urville for his wife, is without a doubt the most numerous. There are enormous colonies of these droll birds around the rim of the Antarctic continent. Edward Wilson, Robert Falcon Scott's right-hand man and naturalist on the *Discovery* expeditions to the Antarctic in 1902, stated that there were "some millions" at Cape Adare, where the ship made its first landing on the Antarctic continent. Scott was not the first to land at Cape Adare, having been preceded in 1895 by a Norwegian whaler, Captain Leonard Kristensen, and in 1899 by Carsten E. Borchgrevink, who actually built two huts and wintered with a small party. The naturalist of that group, Nicolai Hanson, who was on his deathbed as spring approached, expressed the hope that he might live to see the return of the penguins. The first penguin to walk across the ice was caught and put into his arms before he expired.

The thoughts that go through a penguin's mind are limited, as all birds' minds are, to the essentials; they should not be translated in terms of human psychology. And yet many of the things that go on in a crowded penguin city seem strikingly human. There is a constant bickering with neighbors; fights erupt for no apparent reason; and the cacophony of greeting, protest and challenge is deafening.

There is courtship, as when a pair face each other with beaks lifted high in ecstatic display—and, of course, no privacy when the union is finally consummated. There are tragedy and death, as when a lone penguin, returning from the sea after being badly maimed by a leopard seal, is then killed by skuas.

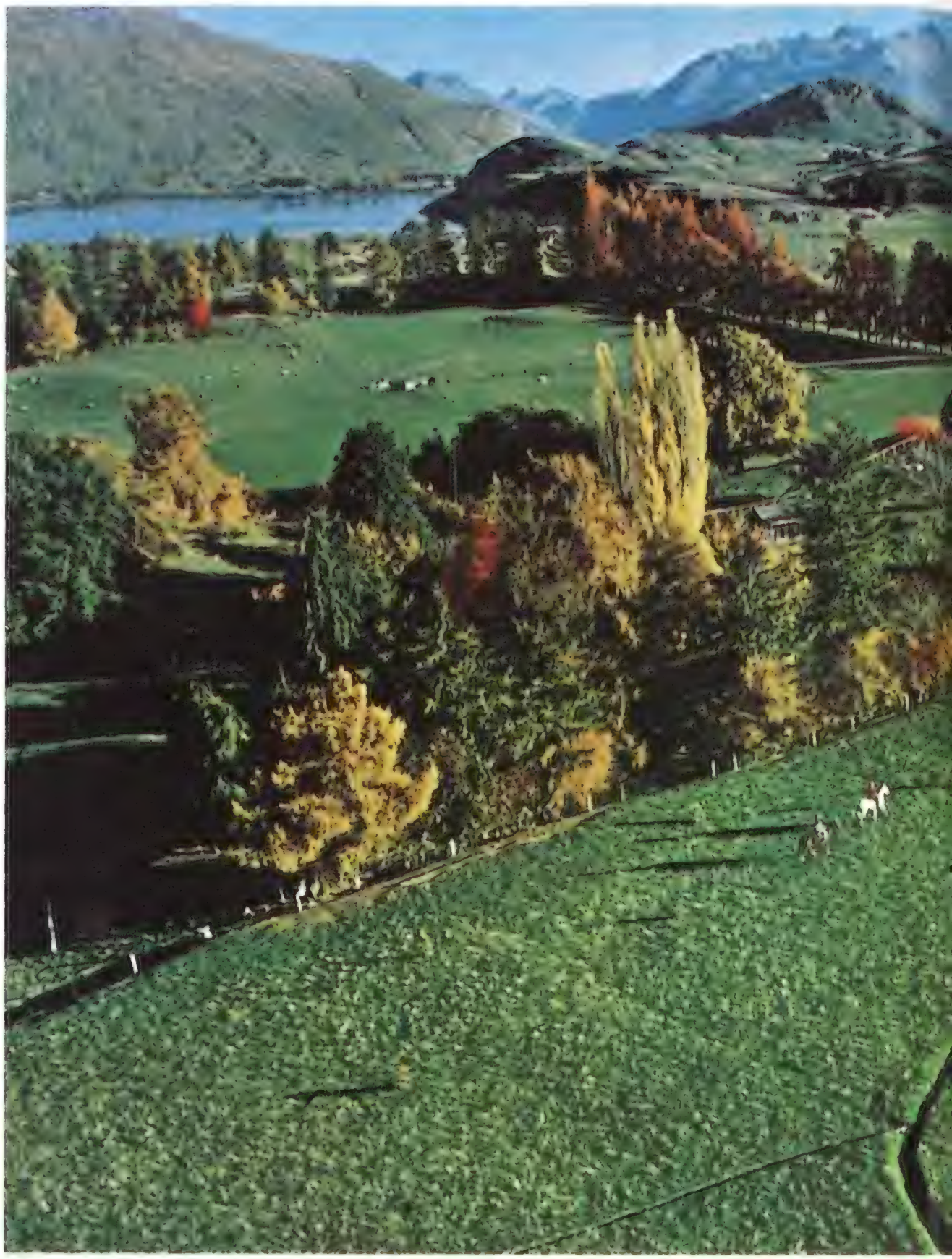
A colony is an ancient mortuary. Trampled into the half-frozen soil or imbedded deep within it are the mummified remains and skeletons of penguin chicks—and some adults—that did not survive. Indeed, the colony is built on the bones of its ancestral inhabitants, some of which may have lain interred for centuries, preserved by the polar deep freeze.

To me, watching penguins has been a moving, thought-provoking experience. Although they may look a bit like little brothers nattily dressed in feathers, they respond to life rhythms quite alien to our own. They are dedicated to being penguins, and they are good at it. Because of their great numbers and the simplified ecosystems in which they live, we can readily observe some basic principles of survival—and life.

Gentoo cares for its own chicks for several weeks.
Then chicks join communal nursery called a "crèche."

Pair of Magellanic penguins in burrow "threaten" Peterson. They "brayed like jackasses," he reported.

The South Pacific. If you've seen



If you've been everywhere, this was worth waiting for. If you've been nowhere, this feels like everywhere. The South Pacific is so much more than you bargained for. Beyond the tropical islands you've dreamed about, there are other islands. Touch a little of each and you've taken the trip of a lifetime.

New Zealand. The World's Great Surprise Package. Begin on the North Island, in Auckland. Drive up through the lush Henderson Valley. This is the wine country, and it's perfect for your first taste of New Zealand. Stop for lunch at a tavern that plunks you into Europe. Till you get the bill. *$8. For two!*

Travel through farmland, cattle ranches and meadows full of sheep, till you reach the Tasman Sea. Below you, miles of black sand beach stretch out as far as the eye can see. Do it all in a day and return in time to watch the sun set on Auckland Harbor.

Caving And Carving. Drive South, and your first stop is the Waitomo Caves. Now, in a small boat, steer your way into a grotto. Shhh. Above you the glow worms cling to the cave ceiling, lighting your way like millions of stars. You want to shout. But don't. If you do, the lights go off.

Next stop, Rotorua. The earth's crust is so thin here that steam breaks through everywhere. Geysers shoot hundreds of feet into the air. And mud pools bubble in the ground. You'll meet the Maoris, New Zealand's native people, here. You'll see how they've harnessed the steam to pressure cook their meals, and you'll watch master woodcarvers teach a lost art to a new generation.

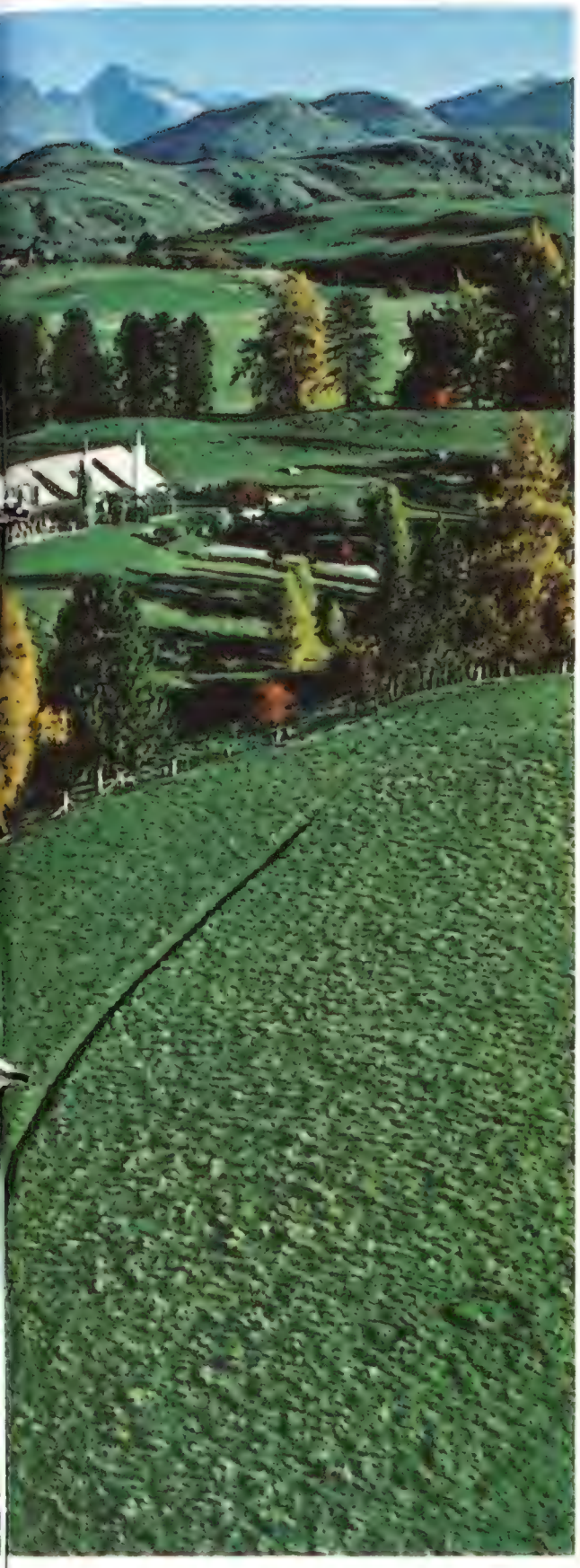
You can't resist buying their work.

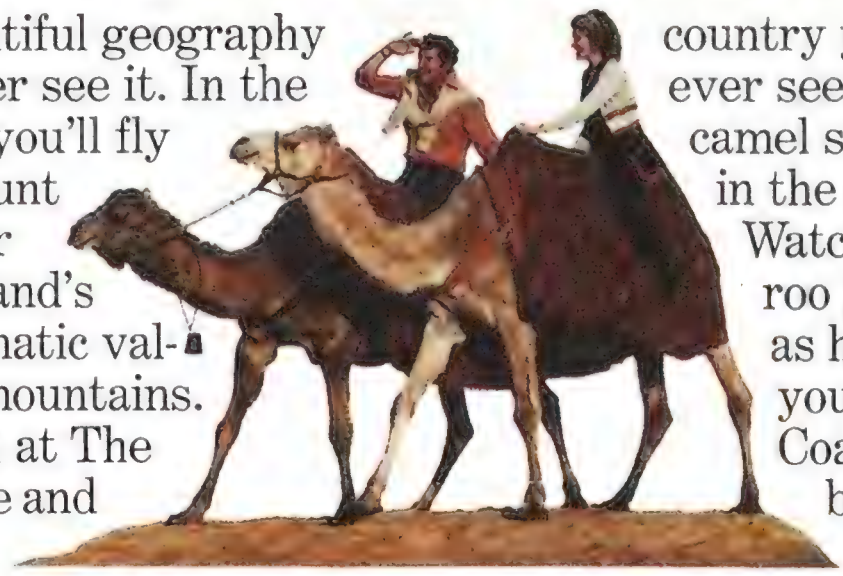
Finish the day in a steamy mineral pool, dreaming about tomorrow.

On To England. Bright and early, fly across Cook Strait to the South Island.

Land in Christchurch and step into England. Paddle a tiny boat along the river Avon. Have a picnic on the bank under the willows and watch a rugby match in the distance. Spend an

one island, you haven't seen 'em all.





afternoon driving through flowers. They're everywhere.

The city gives prizes for landscaping, to homes, streets, even factories. And the people are as warm and friendly as their gardens.

Stop at one of the pubs. Chances are, someone will buy you a beer and bend your ear.

Up Like An Eagle. You're about to see the world's most beautiful geography as few ever see it. In the morning, you'll fly out to Mount Cook, over New Zealand's most dramatic valleys and mountains.

Lunch at The Hermitage and then fly up to a starchy white glacier, and see what it's like to land on skis. Later, watch the sun turn the mountains pink from a lovely room that reminds you of Switzerland, at *one-half* the price.

In the morning, you're off to Queenstown, ready to try "the most beautiful flight in the world." Twenty minutes in the air brings you to the world's most stunning sight. Milford Sound. Take a cruise between towering mountain walls through a fjord that impresses even the Norwegians.

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Australia. The World's Wildest Island. Start in Sydney. It's a dash of San Francisco. A touch of London. The flavor of New York. And the style of Paris.

Shop. Dine. Bask on the beach. Spend a day at the races. And a night at the opera.

But Australia is so much more than city life. Out of town it's the most unusual country you've ever seen. Visit a camel station in the outback. Watch a kangaroo jump as high as your car. Coax a koala bear out of a tree. And feed a penguin who's come dressed for dinner.

Australia is more sights than you'll have time to see. More fun than Dr. Seuss.

Now, Pick A Tropical Island. On your way home, you have a choice of Fiji, Tahiti or the Cook Islands. The world's most beautiful places to unwind.

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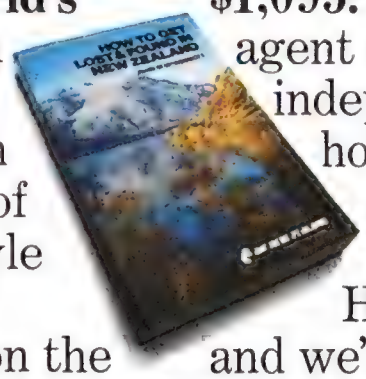

*Tour price includes GIT airfare, low season from Los Angeles, per person double occupancy. The suggested itinerary in this ad will differ, depending on tour selected.

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Researchers gather baseline data in experiments like this, in which healthy green crab's breathing rate is measured in respirometer tank. After a spill, oil's impact on breathing can thus be determined.

By John Cole

Scientists gauge extent of recovery after an oil spill

Researchers from Bowdoin and elsewhere 'fingerprint' sources of coastal disasters and analyze effects on various environments

"I started diving at 5 A.M. I was only working between the surface and 20 feet down, but it was as black as I'd ever seen—oil. I swam through the oil looking for the leak for nine hours.

"The oil was coagulating so quickly in the cold water that it was sticking to the hull. That made it hard to do a search.

"I found the leak at 2 P.M. It reminded me of a piece of cardboard that's been scraped with a sharp knife. And I remember thinking that it was incredible that this tanker was coming into port with such a tremendous cargo of oil and its skin was only three-quarter-inch steel."

Professional scuba diver William O'Brien was the first to learn why the Norwegian tanker *Tamano* was anchored in the center of a spreading oil slick in the harbor of Portland, Maine, one of the busiest oil ports on the East Coast. O'Brien was called in after the oil was spotted in the predawn of July 22, 1972. Forty minutes before, the 810-foot ship had grazed Soldier Ledge, a submerged rock that lurks alongside the approaches to the harbor. So keen was the rock's cutting edge, so massive the ship and so gentle the graze that no one aboard the *Tamano* was aware the ship had been wounded—not until the tanker's black blood began spilling into the cold green waters of Maine's Casco Bay.

The events that led to the *Tamano*'s eventual spillage of some 40,000 gallons of #6 fuel oil into a coastal environment populated by summer yachtsmen, commercial fishermen, vacationing swimmers, clam diggers, lobstermen, cormorants, sea gulls, clams, mussels and other flora and fauna are similar in tone to those that have preceded the entire dismal litany of contemporary oil spills at sea. The public notice these events have received has been of such magnitude that there is scarcely an American over 20 who cannot recite at least a part of that litany: *Torrey Canyon, Arrow, Ocean Eagle, Argo Merchant, Amoco Cadiz, Aegean Captain* and Ixtoc I, the blown-out well off Yucatán that has pumped millions upon millions of gallons of oil into the Gulf of Mexico and defaced beaches hundreds of miles away in Texas.

In 1972, scientists and others concerned with oil spills were in much the same predicament as diver William "Obie" O'Brien. They were swimming in a murky world of conjecture, hypothesis and supposition. They were reduced to "feeling" for oil-spill facts and, like O'Brien, when they got their hands on the actual dimensions of the event, they were often amazed at what they found.

Seven years later, fewer people are swimming in the dark. In the interim, oil-spill research has become a burgeoning scientific field. Crack teams have sprung up in government, private industry and such institutions as the University of Rhode Island, Woods Hole Oceanographic Institution, the University of Texas and the University of New Orleans. Today no major coastal spill takes place without scientists quickly appearing on the spot. As a result of their studies, a general if incomplete picture is beginning to emerge: that while a major spill grabs headlines and appears catastrophic, small, chronic spills, and those in salt-marsh environments, are often the ones causing the long-term problems.

The Tamano *sheds some light*

Just before the *Tamano* spill, a small group of scientists at nearby Bowdoin College had been doing oil-spill research and had been positioning themselves to undertake a long-term oil-spill investigation. The *Tamano* incident offered them their chance. The Bowdoin team, then headed by Dr. Dana Mayo, immediately went to work collecting samples, even though it had no contract and little in the way of financial support. Eventually the state of Maine, impressed with its research, asked the team to take over the study. In the years since, the Bowdoin team has become one of the country's blue-chip oil-spill analysis groups.

The team's travels are an indicator of the global demand for such services. During recent months Edward Gilfillan, now the team's director, and his assistants have been to Brittany twice to study and evaluate the *Amoco Cadiz* spill that ended up on that

Photographs by Michael Freeman

Gerber will study mussel's physiology, later compare data to that from oil-affected mussels.

Dr. Ray Gerber, a biologist on the Bowdoin team, skin-dives for mussels to be used in experiment.

picturesque portion of the French coast. They have been to Puerto Rico to monitor the effects of an oil spill in warm waters and, during the summer of 1978, Ed Gilfillan and his research assistant, Sherry Hanson, spent three weeks north of the Arctic Circle at Scott Inlet on the east coast of Baffin Island. The purpose of that voyage was to investigate the effects of natural oil spills—the seepage of crude oil from rifts in the ocean floor—on cold-water sea animals.

How, over the brief span of a half dozen years, has a team of scientists (many of them young) acquired an international reputation for excellence, even though their home base is a small liberal arts college on the Maine coast?

One key was the system they used—an interdisciplinary approach combining chemical analysis with biological research. Another factor was the attitude of Maine legislators. Maine was one of the first states in the nation to affirm its right to sue on behalf of its citizens for oil-spill damages to their natural resources. Because the Bowdoin scientists were nearby and had the expertise and equipment, they were instrumental in building the state's case so thoroughly that, a few weeks before court proceedings were scheduled to begin, the ship's owners settled and paid $1.5 million in damages. When the outcome of the *Tamano* case became known in the international petroleum community, an important part of the news was that the Bowdoin team's research results had carried a considerable amount of weight.

The team's studies established that the damaging oil had indeed come from the *Tamano,* and not from

Team leader Ed Gilfillan and his Labrador, Anna, tie up at dock after a day of research on the water.

any other source, and measured where and how much damage had been done. "But," Dr. Mayo acknowledged recently in his laboratory office, "it is important to understand that we—the team—are not 'for' or 'against' oil or any oil company. We want to learn as much about oil and its effects on the environment as we can.

"We've got to know the full cost-benefit picture. Take a look out there." Professor Mayo gestured at the window which overlooked a New England landscape. "Roughly 80 percent of the homes in New England are heated with oil. The pressures are going to increase for offshore drilling, and more of it. It's important to us all to know precisely what we are dealing with."

In Casco Bay, the Bowdoin team went to work shortly after the *Tamano* began bleeding in 1972. The effects of that spill on the bay's biological community were extensively monitored by the team, making the *Tamano* spill one of the most thoroughly investigated in history.

In many ways, the most visible of those effects were the most quickly, albeit laboriously, corrected. Yachtsmen and fishermen whose boats were rimmed with a ribbon of oil at the waterline washed and scrubbed their craft with degreasers. Commercial fishermen pursued their harvest in waters the oil did not reach. Clam diggers who worked the area found their tidal clam flats closed to further digging by the Department of Marine Resources, which did not want tainted clams to show up in any public market.

"We found after two years, however, that all but a very small portion of those flats could be reopened," Gilfillan explains. "One of the primary facts that we have been able to establish about oil spills is that there can be recovery. The rate of recovery—which may vary from near zero to almost complete—depends on the spill environment. The quality of the bottom sediment—fine clay or coarse gravel—the likelihood of wave action, strong tides, water temperature, the kind of vegetation . . . each of these factors, and more, plays a key role in determining just how seriously biological life is affected.

"There were clams killed in Casco Bay, of course. They extend their necks from beneath the mud, trying not to suffocate, then they actually dig their way out of their holes in an attempt to escape. But they cannot avoid siphoning oil into their systems. They topple over and die. On the next low tide, the bottom will be white with dead clams.

"We've found more white flats at other spill sites than we did after the *Tamano,* but just because the clams are still alive doesn't necessarily mean they are in good shape. We can tell how a clam is feeling—great, or not so great—by checking on its respiration, its filtration rate of the seawater it siphons and its digestion. These are fairly delicate measurements and, when we compare those from clams in oil-tainted waters to those in pure waters, we can give you a rather accurate diagnosis of how that clam is being bothered by even small amounts of oil."

Hydrophobia for seaweed

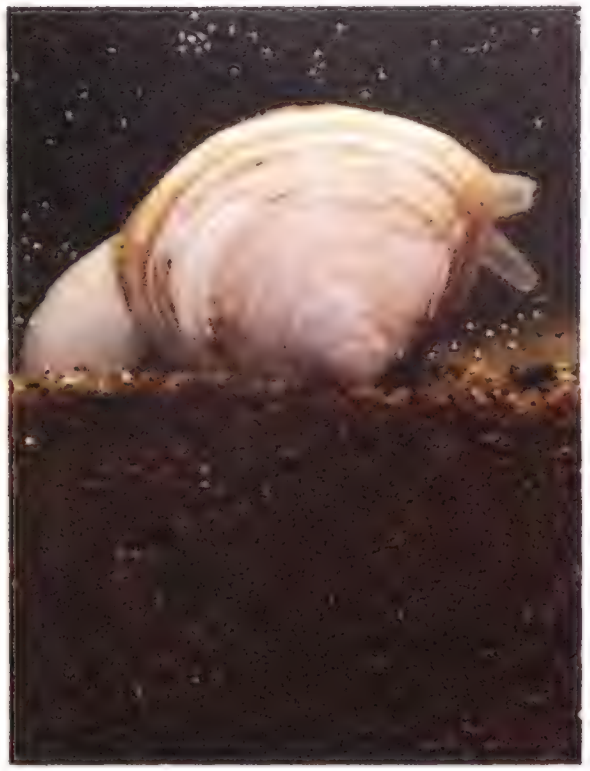
Gilfillan and his co-researchers also discovered that seaweeds *(fucus* and *ascophyllum)* can survive considerable amounts of spilled oil, but have tolerance limits which mean sure death when they are exceeded.

"What happens," says Gilfillan, "is that the plant dies when it becomes hydrophobic, unable to absorb water. Imagine that the brown seaweed you see hanging from the tideline of nearly every rock in every Maine bay is as shiny as your car just after it's been waxed. You know, when the water from the hose beads up and rolls off. That's what happens to seaweed when it's been drenched with too much oil. It will dehydrate and die in a reasonably short while.

"But if seaweed isn't hydrophobic, we've learned it will recover. If it does die, our records indicate it takes two or three years for new plants to return in approximately the same volume.

"We can tell just how much oil there must be in a given volume of water, and on what sort of bottom sediments, to cause a given reaction among a variety

Veteran journalist John Cole is a contributing editor of the Maine Times. *His book,* Striper—a Story of Fish and Man, *was published recently.*



Clam may siphon up food—or oil—with tubes emerging from the side of its shell (at right).

Researchers test various types of oil on organisms. These are sand shrimps in oil from Venezuela.

Mussel siphons up dye from pipette, expels it in pink cloud, revealing its rate of feeding.

of marine biological life. There is no way we could have done that when we began the *Tamano* study."

In their research, chemists on the Bowdoin team first make certain of the amount and kind of oil in the marine environment; biologists then work to discover what effect the hydrocarbons have on the living environment. In both cases, precision is crucial.

When oil is spilled, for example, in busy Portland Harbor, it is important to know the precise chemical identity of that oil. After the *Tamano* incident, the Bowdoin team discovered no areas of the inner harbor that were entirely free of oil residues. To establish which of the residues had been deposited by the *Tamano,* and roughly in what proportion, the oil detectives first had to "fingerprint" the *Tamano*'s cargo.

They were able to do that with the help of a piece of scientific machinery named the gas chromatograph (called a "GC" in the lab). With hundreds of compounds in its makeup, any oil has individual characteristics. Like the fingerprints of humans—no two of which are the same—each oil from each source, whether it be underground, the pipes of a refinery, the storage tanks of a fuel depot or the hold of a supertanker, has its own set of fingerprints. A GC and its operator can get the prints of even a pinprick of oil.

In the case of the *Tamano,* for example, there was oil left in the hold from which a master print could be taken. After that, oily mud, oily lobsters, oily clams, oily seaweed, oil scraped from the bottom of a yacht or a lobster trap, oily feathers, oily periwinkles and oil from the boot bottoms of the researchers could be fed to the GC and analyzed. If the prints matched, the oil had originally been inside the *Tamano.*

Such precise identification can be critically important. When there are millions of dollars in damages at stake, absolute identification of the oil is pivotal. "Just recently," Dana Mayo explains, "we were called in on a simulated case of spilled oil. It included a sample from a real spill, part of a shipment from Venezuela. We not only identified the type of crude oil and the country of origin, but we were able to identify which one of the 26 tankers the oil was spilled from, even though each of them carried petroleum products from the same region. What we need to learn is still more about what effect that spilled oil has on marine organisms, on the undersea environment and the terrestrial environment. There has been more oil spilled on the land, you know, than on the water."

It was just such a "land spill" in the small coastal community of Searsport, Maine, that involved the Bowdoin team in another case of detection and research. At a U.S. Air Force fuel depot at the head of Searsport Harbor, underground oil leaked slowly during the winter of 1970-71. When the spring warmth thawed the frozen ground, the refined petroleum leached into the waters of adjacent Long Cove—a productive clam flat. Not until the Bowdoin team fingerprinted the oil was its subterranean source established. As it turned out, there were two kinds of petroleum products on the loose: jet fuel and heating oil, indicating a ruptured pipeline used to transport both types had been "weeping" for some time.

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With the source identified, the scientists could study the effects of those particular compounds on the population of soft-shell clams *(Mya arenaria)* in Long Cove.

Previous research had made it clear that marine organisms in the intertidal zone and the salt marshes are highly susceptible to hydrocarbons. "Oil and the creatures of the intertidal zone just don't get along," Gilfillan says. "There is no doubt about what happens, and it's all bad. That's the overriding generality. What we need to learn is more about the specifics, the details."

Some of those details, verified by the work that team member Judith Cooley has done, include the information that mussels no longer spin their "lifeline" byssal threads in the presence of hydrocarbons in concentrations of slightly more than one-half part per million in seawater. Without those threads at the base of its shell, shorn of its "beard" as mussel gatherers call it, the creature is unable to anchor, to hold to a dock piling or rock. It drifts to hostile environments and is lost. Nor will clams reproduce when their environment is contaminated. But precisely when such creatures will recover their systemic balances is still unknown, which is one of the reasons why the Long Cove flats have been so diligently surveyed.

The marine biologists now know that the Searsport spill is still present in the Long Cove bottom sediments and in the clams; GC analysis has told them that. They know there is a possibility the spilled oil or its additives have caused an increase of carcinogenic tumors in soft-shell clams in heavy spill areas. They also know that the clam recovery has been agonizingly slow.

"We have a long, long way to go," says Gilfillan, "but we are beginning to learn some things about oil spills we didn't know a few years ago.

"Take the *Tamano* spill and Searsport. At least 40,000 gallons of black, sticky fuel oil oozed out of the *Tamano*. It looked awful. About 5,000 gallons of home heating oil and jet fuel seeped into Long Cove. If it hadn't been for the dead clams on the bottom, hardly anyone would have noticed that spill.

"But you go back to Casco Bay now, you'll have to look hard for signs of the *Tamano*. Visibly and biologically, there has been excellent recovery.

"In Searsport, there has been practically no recovery. With that clay sediment in Long Cove holding that oil in place, there has hardly been any change in almost ten years. The clam population just hasn't come back. I don't know when it will."

His hands rise in the air, a gesture of mock alarm. "When people see oil spilled, they are horrified. It looks awful, and it stinks. I could smell the oil on Brittany's beaches a mile away when I first went over just after the spill. I went back two months later, and I was amazed at the recovery. What couldn't be seen at Searsport did more long-term damage.

"Would you believe that fish can learn to tolerate certain amounts of oil? Research that's been done with flounders in a laboratory situation that corresponds to an underwater, oil-covered mud flat has

When this Mexican offshore well blew out in June, slick drifted 500 miles to pollute U.S. Gulf Coast. As offshore drilling increases, more spills are expected.

told us a good deal. The fish absorbs some of the oil through its gills and along with what it eats. As the residues of hydrocarbons build up in the flounder's system, that system develops an enzyme that breaks down a part of the oil molecule. That makes it possible for the fish to convert some of the oil to energy; the rest of the molecule has become palatable to certain kinds of bacteria which consume it. I wouldn't say that the flounder is in tip-top condition for having been through the process, but it survives and lives to swim another day.

"We have to learn more about that sort of recovery in other species as well. How fast? How slow? How do different environments affect recovery rates? What is the long-term role of different dispersants? What is the full role of bacteria in the water? I saw the water around the *Amoco Cadiz*. It was a milky, white emulsion; I suspected there were a lot of bacteria at work there. We need to learn more about them. Perhaps we could get some of those bugs to work in Searsport. I mean, what do you do for Searsport now?

"We've got to have more body-and-fender people for the environment, folks who know how to repair it. Sure as shooting, there will be more accidents."

There have been several times since the *Tamano* when Gilfillan has made actual projections of an oil spill's impact. "Once I get the facts over the phone," Gilfillan explains, "I can respond 'not so bad, bad or godawful,' depending primarily on the kind of product spilled and the location."

"One thing we can certainly say," adds Mayo, "is that highly refined petroleum products like gasoline and jet fuel, spilled in protected water—a salt marsh, say—where there is a clay bottom and little tidal action, these are places that will be damaged most.

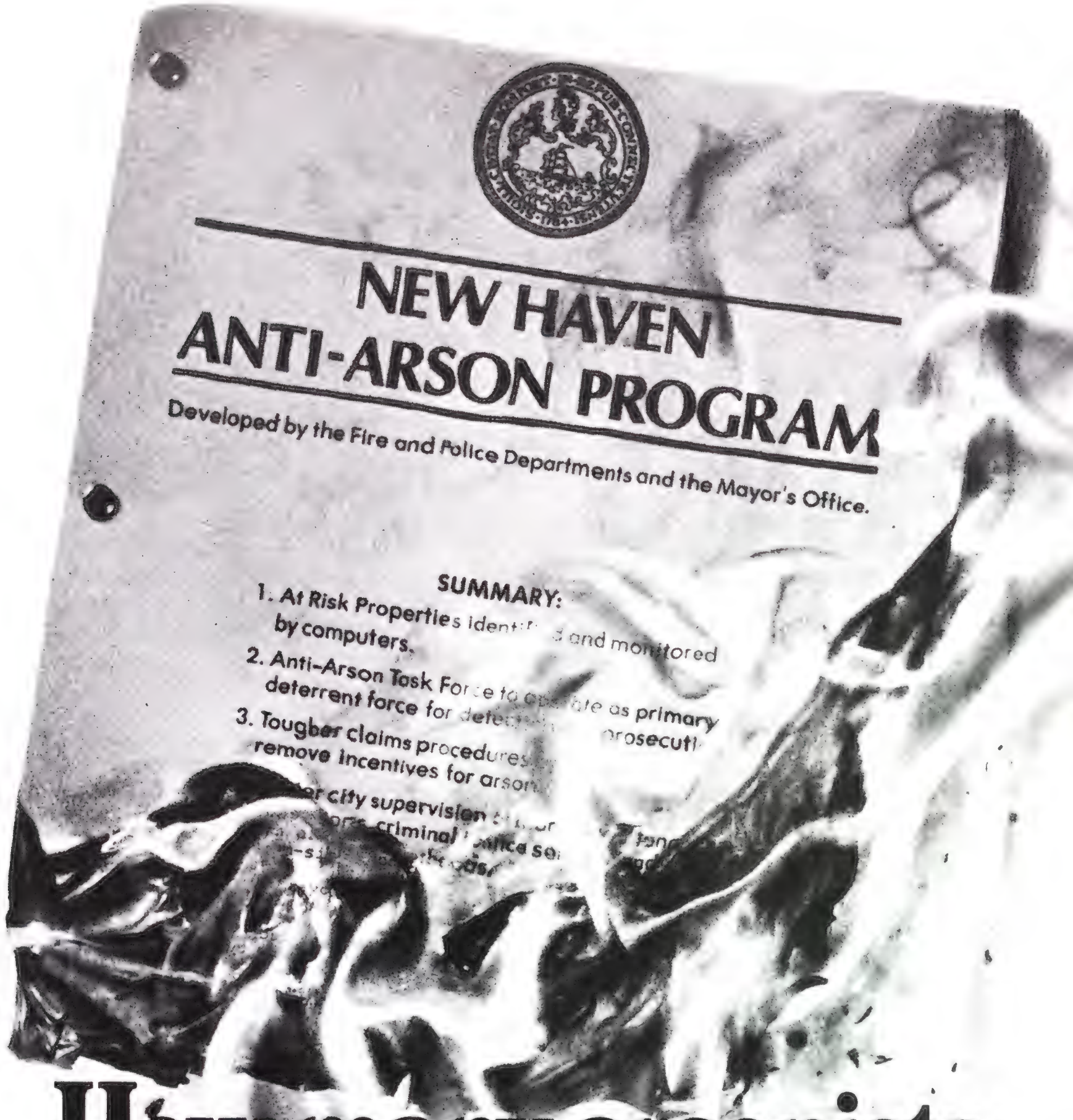
"As the science of oil-spill detection becomes more and more precise—and I think we're demonstrating that precision—the companies responsible will tend to become more careful. I know I would if I were in their shoes.

"Still," Mayo says, "you'll always have situations like the one in the Gulf of Mexico. Wow, what a spill that is!"

Both hands rise over his head. "There's still so much to be done."

Given the advances that have been made since the morning William O'Brien swam blindly in a dark sea of oil, there is every reason to expect that the members of the Bowdoin oil-spill research team and its counterparts around the globe will multiply in numbers and, as they do, will put some of the best scientific minds and equipment to work answering the questions that are still left to answer. There are, after all, considerably fewer questions today than there were at 1:20 A.M. on July 22, 1972, when the tanker *Tamano* grazed Soldier Ledge.

Chip Hires/Gamma-Liaison



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[1] New Haven is but one example of organized anti-arson efforts proving their worth. Seattle, Washington has reduced arson by 30%; *Tampa, Florida by 47% in just two years!*

[2] New Haven's crack Arson Squad is made up of city investigators, prosecutors, and the police and fire departments. Cities with divided anti-arson forces all too often fail to detect or convict the culprits.

[3] Ætna is supplying funds to establish two model anti-arson programs: for New Haven ($97,000) and for the California District Attorney's Association ($140,000) to develop manuals for national distribution on how to prosecute arsonists successfully. We've hired John Barracato, one of the nation's foremost arson experts whose credentials include Deputy Chief Fire Marshal of New York City, to coordinate our anti-arson efforts. To learn how you can help your city, write to John Barracato at Ætna Life & Casualty, Hartford, CT 06156.

[4] Connecticut recently passed some of the toughest arson laws in the country, and Ætna is working hard to get such laws in other states. This effort needs the help of every citizen.

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By Joseph Wechsberg

In the Baroque world of Vienna all are on stage

In this city of palaces, people who can't forget the good old days of empire play-act their way through life and death

For weeks, the ladies of Vienna practiced their deep curtsies, while gentlemen polished their low bows and their hand-kissing style. The Lippizaner stallions of the Spanish Court Riding School (p. 84) rehearsed for a special performance. A gala dinner was arranged in the Hofburg (p. 80), the imperial palace in the middle of the city. Vienna is the capital of the thoroughly socialist Republic of Austria, but when Spain's young King Juan Carlos and Queen Sofia came to town, Vienna once against felt itself the capital of the flamboyant but vanished empire. It abandoned itself to a fling of let's-pretend nostalgia for the good old days of the Baroque.

"Baroque" has become a much-used and misused term. Around 1600 jewelers in Portugal and Spain classified an irregularly or imperfectly shaped pearl *barrôco* or *barrueco*. Such pearls were prized; no two *barrôco* pearls were ever alike.

Gradually the appellation "Baroque" was used in all the arts to denote something that was different from the classical symmetry and noble restraint of the preceding Renaissance. After the Baroque era (1600-1750) the term remained and was used in a derogatory

In front of the Karlskirche, Vienna's Baroque masterpiece, Rudolf Rubinson, a clarinet student at the Academy of Music, exchanges grimaces with pet crab-eating macaque he bought in Italy.

Pestsäule, or Plague Column, memorializes Black Death of 1679, when at least 35,000 died.

Photographs by Paula and Yoichi R. Okamoto

A bonfire is part of the decor at a dinner given by Erbprinz and Erbprinzessin Schwarzenberg in palace garden, ten blocks from the Vienna State Opera.

sense when something was not clear and "classical." Webster still defines it as a style characterized by "elaborate and sometimes grotesque ornamentation."

That may be the truth but it is not the whole truth. There is nothing grotesque about the masterpieces of Merisi Caravaggio and Johann Sebastian Bach, of Gianlorenzo Bernini and Johann Bernhard Fischer von Erlach. All of them, great artists of the Baroque, were different from each other but all expressed intensity of feeling and strong emotions.

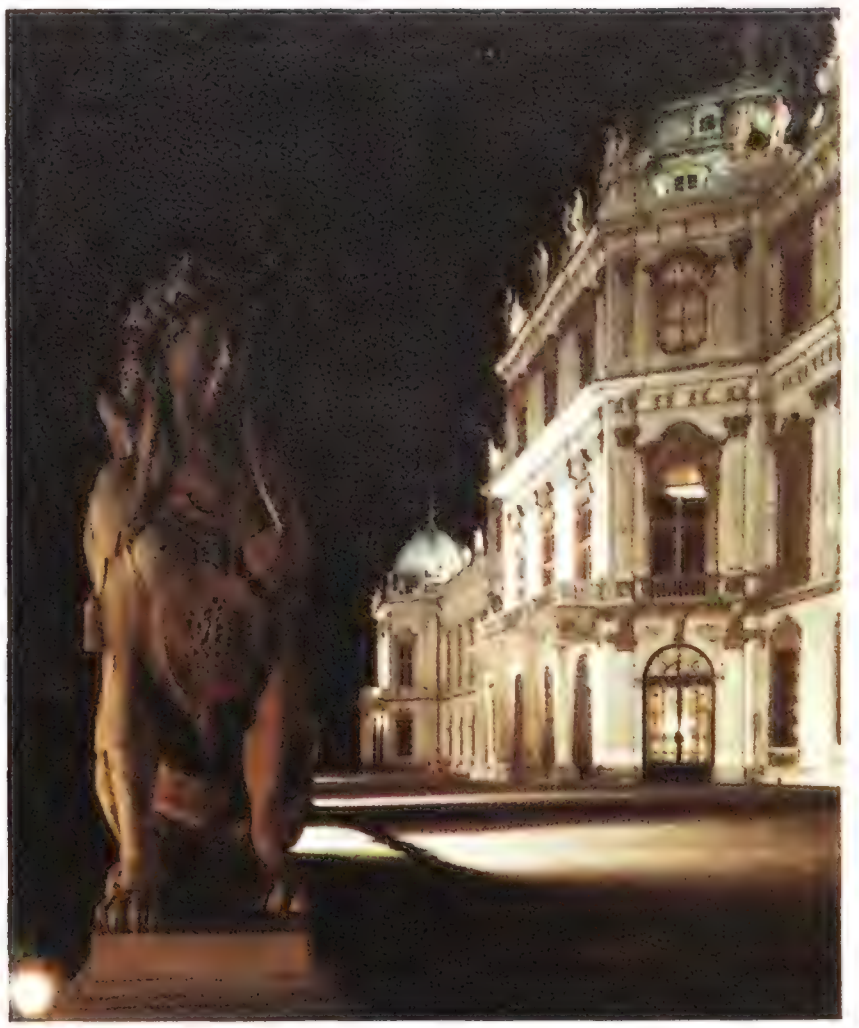
Historically, the Baroque followed the Counter-Reformation. During the 16th century, Europe was shaken by the struggle between Catholicism and Protestantism. For a while it looked as though Protestantism would emerge victorious. Around 1560 no more than a 30th of the population in Austria, then the seat of the Catholic Hapsburg empire, was Catholic. Today Vienna is again a bastion of Catholicism. Many church holidays are legal state holidays. It is hard to realize that Vienna was once a Protestant city.

In 1551 Ferdinand I, later Holy Roman Emperor of the German Nation, had asked Ignatius of Loyola, the founder of the Jesuits, to send missionaries to Austria to avert a "catastrophe"—the country might be lost forever to Protestantism. Chroniclers report that Catholic priests were beaten up and Protestant noblemen rode on their horses through St. Stephen's Cathedral during the service.

The Jesuits, early masters of public relations, went carefully about their tasks. They knew that the Viennese loved spectacles, that they would accept an unpleasant truth provided it were amusingly performed on the stage. After 1600 the Jesuits staged miracle and Passion plays, in Latin. Both these and the court

Somewhat of a Baroque spirit himself,
the author has lived in Vienna many years.

Michaeler Platz entry to Hofburg, onetime winter palace of Hapsburgs, is a 19th-century addition based on Baroque plan. Sculpture represents sea power.



A sphinx guards Belvedere Castle, built in 1721 by Baroque architect Lukas von Hildebrandt.

operas, with their elaborate staging and sumptuous costumes, were inspired by the Italian Baroque. Between acts there were German-language intermezzi for audiences that might be bored with Biblical stories or complicated plots. The two strains of entertainment—the "high road" of God, the saints, the aristocracy, and the "low road" of our world with its clowns—still dominate the stage of Vienna. The most beautiful integration was achieved by Mozart in *The Magic Flute,* even today the most popular opera in Vienna.

In Vienna there was another consideration. Four years prior to the Turkish Siege of 1683, which had threatened the very existence of the empire, the Great Plague had invaded Vienna. Several epidemics of the dread bubonic disease had created havoc in the city since 1349, but the "Great Plague" was the worst. Some chroniclers reported it killed "half the population." That turned out to be a "baroque" exaggeration; the number of victims was closer to 35,000—bad enough. The emperor, his court and everybody who could afford it—even many doctors—left the paralyzed city. Dr. Paul Sorbait, a famous physician and later rector of the University of Vienna, accused the authorities of criminal ignorance. The sanitary conditions were dreadful. Dead dogs, cats and fowl were thrown into the streets. Goats were kept in living rooms because their smell

Formally costumed young woman promotes perfume shop by handing out fresh roses to pedestrians.

was said by some to suck up the germs of the plague.

Dr. Sorbait suggested the ringing of church bells "because this will clean the air and move the winds that have been locked in. . . . Yes, the bells will drive out the evil spirits floating through the air." Criminals had to be released from prison to bury the dead.

Many people claimed that the only protection against the plague was to get drunk and stay drunk. According to a cherished local legend, the popular folk singer Augustin Marx drank so much wine that he passed out, was carted off with the dead and thrown into the "plague pit." He woke up, tried to get out of the ditch, failed and had to be rescued by the criminals "who arrived with the next load of dead."

During the plague, Emperor Leopold I had vowed to put up a Plague Memorial of white Salzburg marble in the Graben, not far from St. Stephen's Cathedral, when the disease had abated. He kept his vow. The young Johann Fischer was commissioned to make the bas-reliefs. The Baroque exuberance of the *Pestsäule* (p. 79) either delights or shocks you; it is almost a test of how you will feel about the Austrian Baroque.

Baroque churches and palaces are spread all over the city. In Vienna it was neither the church authorities nor the economically minded Hapsburg rulers who at first sponsored the Baroque, but the wealthy noblemen. The rich people had plenty of money but little confidence in the future of the empire. Cheerful pessimism has always been a good adviser in these latitudes: eventually the empire *did* go bankrupt. For the time being, it seemed safer to put up beautiful buildings "for eternal memory" than to invest one's money otherwise. So Vienna's Baroque was one of the biggest building booms in European history.

It became "a city of palaces." Building was almost a passion among the wealthy noblemen. The rich didn't have the great Bernini, but they had a pupil of Bernini's studio who had spent 16 years in Rome: Johann Bernhard Fischer, later ennobled and known as Fischer von Erlach. He became the greatest builder of the Austrian Baroque. His major competitor was Johann Lukas von Hildebrandt. Like stage designers, they created make-believe. They worked fast; there was no time to use much marble. A mixture of plaster, lime and sand would do. Their workers were accomplished masters in forming stucco. By 1720 Vienna had more than 200 town palaces and summer villas.

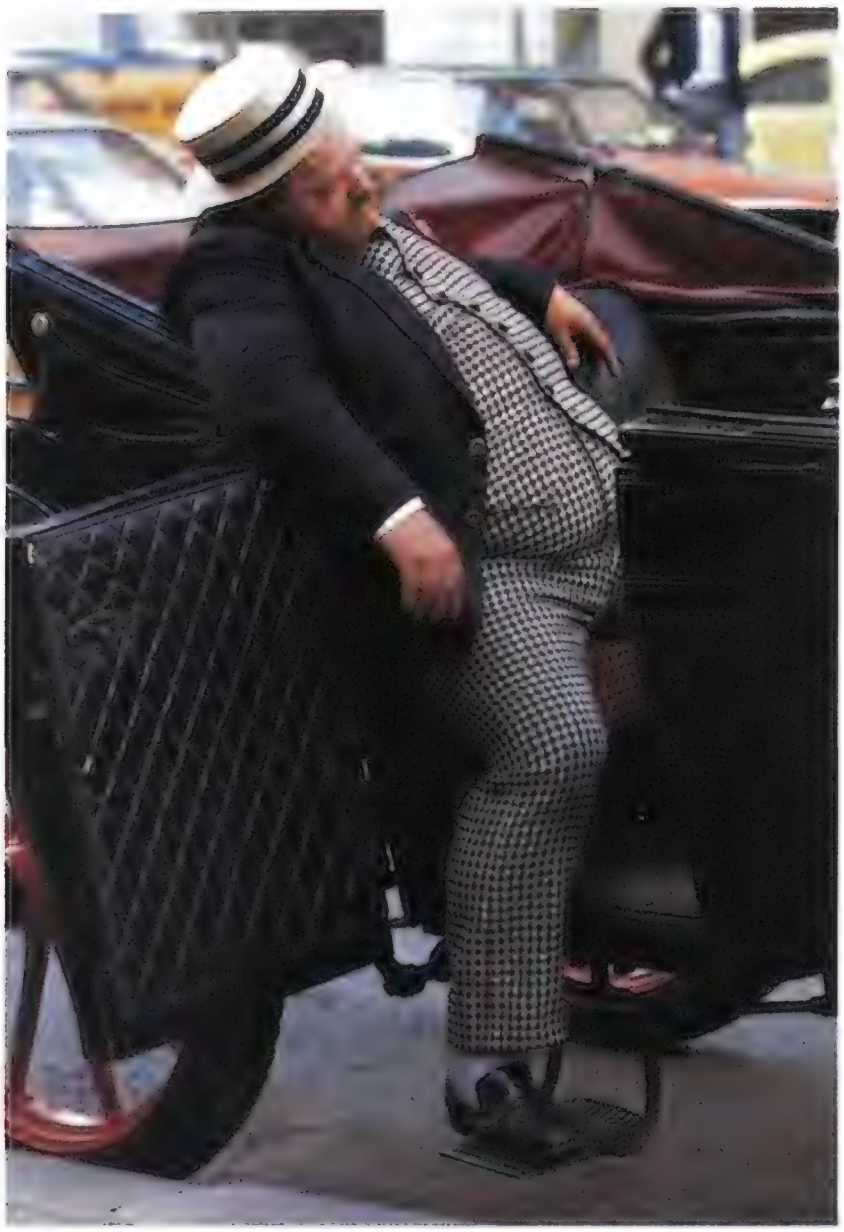
Fischer von Erlach's masterpiece in Vienna is the beautiful Karlskirche, also the result of an imperial vow during an outbreak of the plague. In 1713 Emperor Charles VI vowed to build a church to his patron saint, St. Charles Borromeo. It is beautiful and also strange and bizarre, truly Baroque, with its "Trajanesque" columns—in Rome there was only one, but with typical exuberance Fischer built two.

Hildebrandt's masterpiece is the Belvedere, which he created for Prince Eugene of Savoy, who became the Empire's most famous military leader, Austria's "real emperor" and greatest art patron. He already had a winter palace in town (now Austria's Ministry of Finance), and commissioned Hildebrandt to create his summer palace on the finest slope in Vienna, with a magnificent view of the city, and the "baroquely" rounded Kahlenberg hill in the rear.

At the foot of the slope Hildebrandt built the Lower Belvedere, where the old prince lived, surrounded by gold and stucco. Fine formal gardens lead to the Upper Belvedere, where the "real emperor" received foreign delegations, keeping on his hat, using imperial cere-

monial. There he kept his art treasures. (And in July 1914, Archduke Franz Ferdinand and his wife left from the Belvedere for Sarajevo where they were killed, triggering the First World War.)

Elsewhere in Europe, the Baroque expressed a style in painting, architecture, music and sculpture. But in Vienna it became more: a way of life, a state of mind. The Viennese have remained Baroque people; apparently they are unable to separate reality from make-



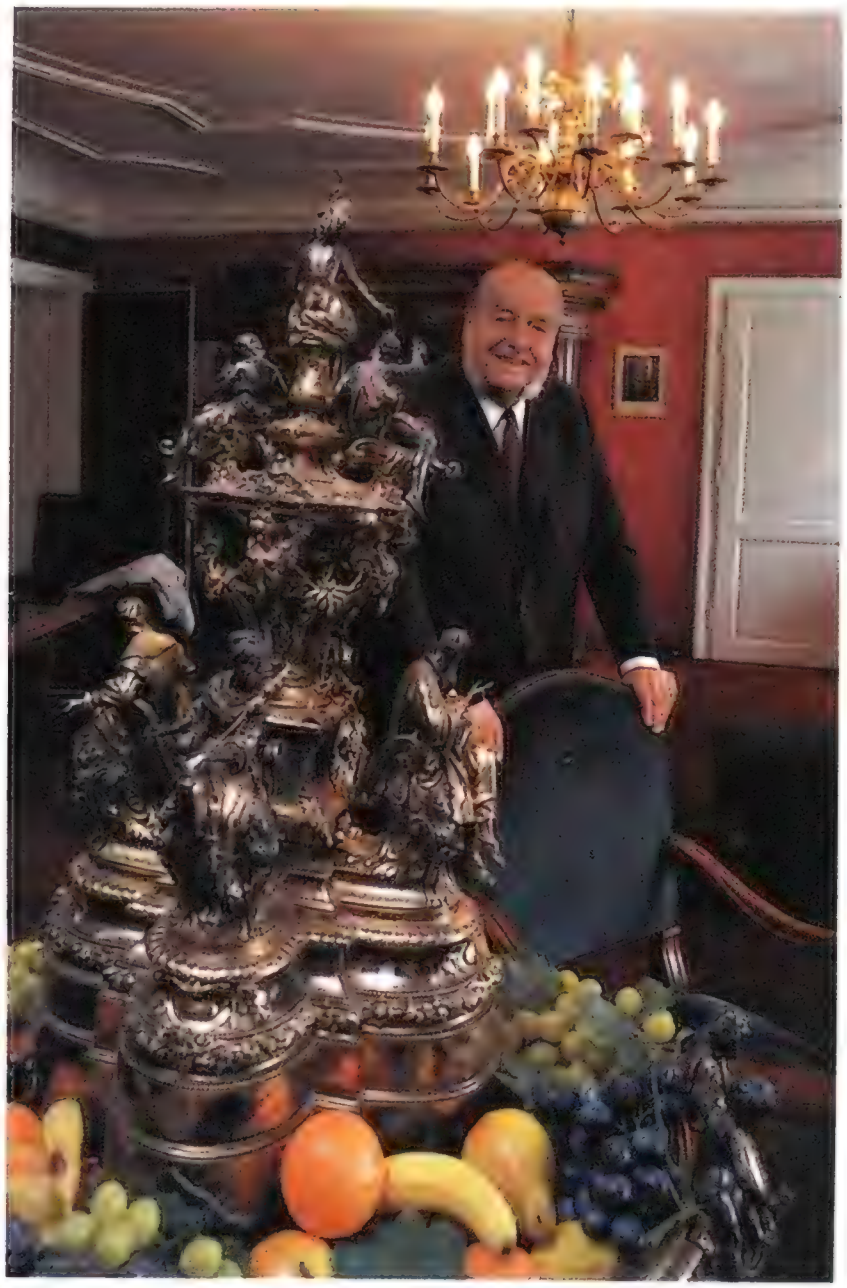
An example of take-it-easy Viennese spirit of *Gemütlichkeit,* a coachman dozes between fares.

believe. Fittingly, for centuries the Viennese have been infatuated with the theater. During the early postwar days, when the Viennese had no light, no heat, no food at home, they would walk to the nearest theater and would sit there, wearing their overcoats, blissfully ignorant of the grim present. They still exhibit *Gemütlichkeit,* their internationally famous easy-goingness. They frankly admit that their *Gemütlichkeit* is often superficial make-believe, but it helps their "image." Everybody in Vienna knows what "image" means. "It's good for our tourist business," I was told.

It took me years, living here, to understand that in Vienna almost everybody plays a part. They are all actors. At the same time, the actors of Vienna are also their own critics and their own audience. Often it is not clear exactly what part they are playing. Actor? Critic? Listener? Truth and legend are so interwoven that they cannot be separated.

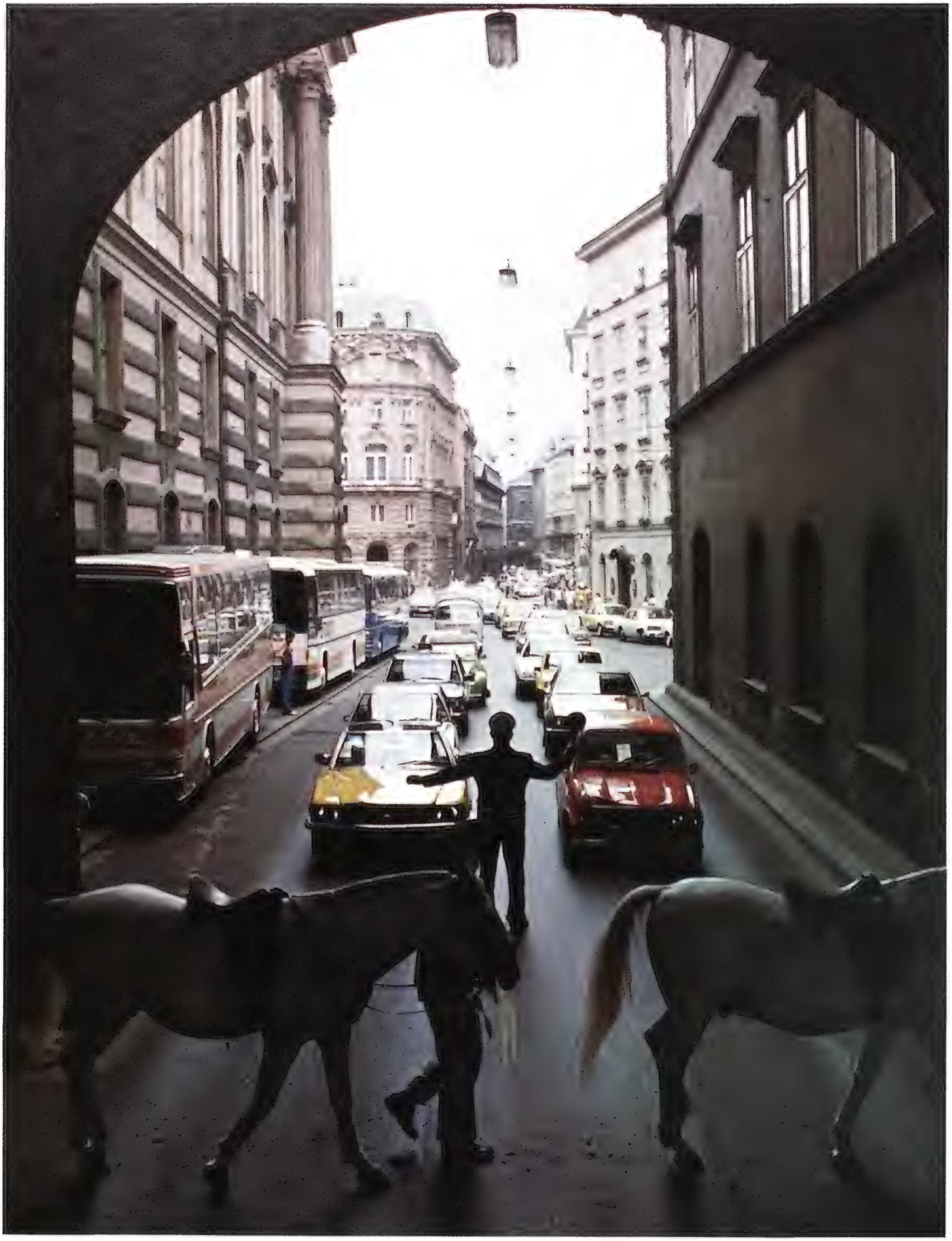
They love titles, often imaginary ones. To this day it is considered vulgar to have only a name: one must have a title. When the Viennese are really polite, they address a man not by his title but by the one he would *like* to have. The *Herr Buchhalter* (bookkeeper) becomes a *Herr Oberbuchhalter* (head bookkeeper); the *Vize-präsident* becomes a *Präsident.*

Fifty years ago I was awarded the title doctor-at-law at Prague University. I gave up the practice of law soon and also the title. This seems to create irritation in Vienna. Alas, the title *Herr Doktor* is considered



Beside great-grandparents' silver gilt épergne stands Manfred Mautner-Markhof, industrialist, art patron.

Text continued on p. 86



Traffic stops as Lippizaners of the Spanish Court Riding School are led back to their stables after practice session. The archway is part of Hapsburg winter palace, where horses perform.

Authentic.

FEATHER BONNET
With white hackle (feather). Coloured hackles are used in the British Army to differentiate between regiments.

SILVER COLLAR BADGES
The Dewar's Highlander wears the Saltire of St. Andrew, Patron Saint of Scotland.

SHOULDER PIN
In cold weather, or at night, a clansman in the field would unfasten the shoulder pin so that his plaid became a warm cloak or a blanket.

"WING" EPAULETS
To protect the shoulders from sword cuts.

DRUM MAJOR'S BATON
The Scots have marched into battle to the skirl of the pipes, from Bannockburn (1314) to Aden (1967).

SCARLET DOUBLET
Known the world over as the Scottish and British soldier's colour.

METAL "BREASTPLATE"
Worn where belt and sash cross, and carrying the drumsticks symbolic of the role of the Drum Major.

GOLD SASH
Always worn over the left shoulder.

SWORD
With basket hilt. Worn at the belt, it is called in the Gaelic the *claidheamh beag*, or small sword, to distinguish it from the *claidheamh mòr*, or broad sword.

SPORRAN
Originally a leather wallet, worn suspended from the waistbelt, to carry the day's ration. There are no pockets in the kilt.

KILT
Formerly in one piece with the shoulder plaid, but now worn separately. Highland regiments of the British Army wear the kilt.

PLAID
Means a garment, the main garment of early times, which was kilt and blanket-wrap all in one piece. Tartan is the characteristic cloth of Scotland, woven in stripes.

CADADH
Gaelic name meaning the tartan used for hose.

The Dewar Highlander.

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Then, one by one, they're brought together by the skilled hand of the master blender of Perth.

Dewar's never varies.

BLENDED SCOTCH WHISKY • 86.8 PROOF • ©SCHENLEY IMPORTS CO., N.Y., N.Y.

Outside St. Stephen's, balloon seller strolls past font for the faithful, surmounted by a death's head.

something of an insult, usually awarded by coffeehouse waiters to people wearing glasses. Baldheaded people are called *Generaldirektor,* I don't know why.

While alive, a Viennese wants to have a fine title. When he dies, he expects to have a fine funeral, a *schöne Leich.* The funeral ceremonial puzzles the foreign observer. He has seen the pompous sarcophagus of Empress Maria Theresa and her Emperor, Franz of Lorraine, with its Baroque ornamentation. He notices that the streetlights are turned on, even on a bright, sunny day, for the funeral of a Very Important Person. He is surprised that the coffins of honorary members of the Burgtheater and the State Opera are ceremoniously carried once around "their" house, before the coffins are limousined off for burial.

Death is ever-present in Vienna, but it isn't serious, because death is only a part in a play. During the First World War they said in Berlin that the situation was serious but not hopeless. In Vienna they said the situation was hopeless but not serious.

The Baroque can be paradoxical. Fischer von Erlach, the builder of immemorial beauty, was buried in 1723 in an unmarked grave in the catacombs of St. Stephen's, no one knows where. Mozart, the greatest Austrian genius, was dumped into a third-class grave, no one knows where, in St. Marx's cemetery. Not that it would matter to Erlach and Mozart. At the *Heuriger* (taverns where the new wine is sold) they sing, "There'll be a wine but we won't be around anymore," and the people cry because it is so nice. But out of the corners of their eyes they watch their friends. The suicide rate in Vienna is among the highest in Europe.

Opera, that Baroque entertainment with its strange mixture of art forms, was performed in Vienna in the early 17th century. An unsigned manuscript of Claudio Monteverdi's *Il Ritorno d'Ulisse in Patria* (1641) is now at the Austrian National Library. A Monteverdi pupil, Pier Francesco Cavalli, wrote 42 operas; Pietro Antonio Cesti wrote several works especially for Vienna. Cesti's superopera *Il Pomo d'Oro* was written to celebrate the marriage of Emperor Leopold I with Margareta Theresa of Spain. The extravaganza of festivities lasted six weeks. Leopold considered opera an expression of imperial patronage, and the production of *Il Pomo d'Oro* was the talk of Europe: five acts with 66 scenes, 48 parts, a cast of a thousand. A special theater with 1,500 seats was constructed. The production cost was stupendous. Leopold paid it, cheerfully.

The Viennese are still opera crazy and theater crazy. Well-known singers and actors are more famous in Vienna than composers and writers. No one cares about scientists and Nobel prizewinners. Everybody took it for granted that the Vienna Opera, bombed and burned out during the last days of the war, must be rebuilt at once. Hospitals, schools, houses would have to wait. Streetcar conductors made impromptu collections among their passengers. Everybody gave a couple of schillings "for the Opera." The reopening in November 1955 convinced the Viennese, more than the earlier State Treaty, that their country was free.

Most Viennese never go to the opera but evidently all have ideas of how to run it. Herbert von Karajan once told me how difficult it was to be *Direktor* of an opera house "with 1,700,000 codirectors." Vienna's operetta, the quintessence of unreality, became world-famous in 1874 when Johann Strauss, the Waltz King, wrote *Die Fledermaus,* which is still performed at the State Opera every New Year's Eve. Strauss made people forget, and has a lovely monument in the Stadtpark. Sigmund Freud, who made people remember, has only a minor monument at the University. Analysis was never popular in the city where it was created; instead the Viennese go out to the *Heuriger,* drink the new wine and "talk into their glass." It's less expensive therapy and they believe more helpful than the analyst's couch.

After World War II, Austria's fine old Haydn hymn, *Gott erhalte Franz den Kaiser,* was banned because of monarchistic and Nazi associations. The new national anthem by Mozart is not so popular. But everybody knows the baroquely exuberant refrain from *Fledermaus,* "Happy is he who forgets what cannot be changed." That is Austria's theme song today.

Dancers swirl at the very "baroque" Concordia Ball, held in cavernous *Altes Rathaus,* old guildhall.

Why this one-of-a-kind invention didn't end up as the only one of its kind.

Every new invention needs another new invention—the one that can mass-produce it at an affordable cost.

For example, Bell Labs invented a process for making the glass rods from which hair-thin fibers used in lightwave communications can be drawn. The fibers have far greater capacity than conventional copper wires, so they'll help keep costs down. In fact, they've been carrying voice, data, and video signals under city streets for about two years in a Bell System demonstration.

But standard lightwave systems will require *miles* of the fiber, produced at low cost and to specifications nothing short of microscopic.

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For example, while Bell Labs scientists were inventing new glass fibers, Western Electric engineers and scientists were tackling the manufacturing problems involved.

The fibers had to be drawn from molten glass at high speeds, with less than a 1% deviation in diameter.

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Scientists and engineers at the Center discovered that laser light beamed onto the fiber cast a characteristic pattern.

By correlating the pattern to the fiber's diameter, they were able to build a monitoring system into the fiber drawing machinery. It measures the fiber 1000 times per second, automatically adjusting production to keep the diameter constant.

The system works so well that in all the miles of fiber produced by Western Electric, the diameter varies by no more than 30-millionths of an inch.

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Western Electric

By Gina Bari Kolata

Trial-and-error game that puzzles fast computers

'Hard' problems, common in everyday life, are so tough to crack they may become the basis for new systems of secret codes

A few years ago, officials at the Bureau of Fisheries came to call on Shen Lin at Bell Laboratories. Lin is a computer scientist who works on finding ways to solve a certain kind of problem with which the Bureau was confronted. The Bureau monitors fish populations in the Gulf of Mexico. Each day it chooses some 300 points in the Gulf and then it sends people out in a boat to sample the fish and the currents at each point. The problem was, what is the shortest route the boat can take and still pass each point?

Before coming to Bell Laboratories for advice, the Bureau of Fisheries officials just took a map and drew what they felt was the best route for the boat. This method, they realized, was extremely inefficient. Surely there must be a computer program to find the shortest route. But, surprisingly, there was no such program. Although Lin could help the officials to shorten their routes by seven to eight percent, neither he nor anyone else could be certain of finding the shortest tour of 300 points—without spending billions upon billions of centuries of computer time.

That nearly inconceivable length of time is even more remarkable in view of the speed at which computers calculate. A medium-fast computer can add one million times faster than a person, and a fast computer can add 1,000 times faster still. As Donald Knuth of Stanford University explains, comparing the calculating speeds of computers and humans is like comparing the speed of the fastest airplane to the pace of a snail.

Computers have dramatically expanded mathematicians' horizons, allowing them to make calculations never before dreamed of. But, at the same time, they have made mathematicians recognize the limits of their ability to solve certain types of problems. Within the past decade, mathematicians and computer scientists grouped together hundreds of related problems that, in principle, can be solved primarily by adding and multiplying. However, even the best methods of solving these problems can require billions upon billions of calculations—enough to keep the computers busy for years, even centuries. The scientists are now learning to live with this impediment, and even to exploit it to create a new kind of seemingly unbreakable secret code.

These simple, but possibly unsolvable, problems are not new. Many have been around for decades and they have cropped up in many practical situations. But, until 1971, mathematicians and computer scientists did not realize the problems were related. Then, Stephen Cook of the University of Toronto made a discovery. He found that several of these problems were equivalent, meaning that if anyone could find a shortcut to solving one of them, the shortcut could be adapted to solve the others as well.

Previously, mathematicians had been looking at each problem separately, hoping somehow to find a way to solve it in a feasible length of computer time, but Cook's discovery systematized the study of these problems. Shortly afterwards, Richard Karp of the University of California at Berkeley greatly extended the list of equivalent problems, and a scramble began in the scientific community to find which problems were equivalent to these hard ones. So far, hundreds have been added and more are under consideration.

A hard problem by any other name

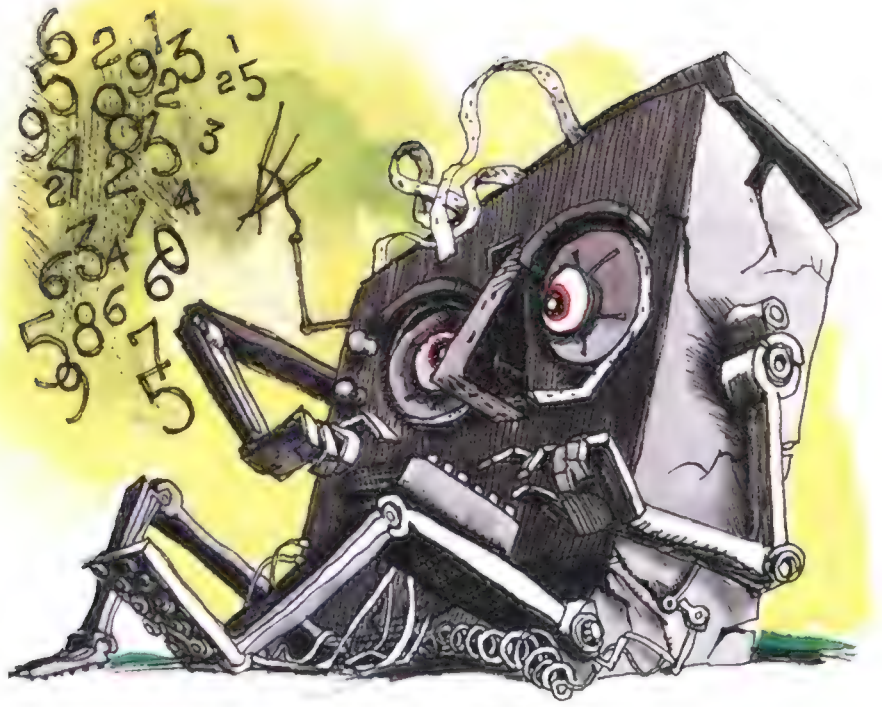
In 1974, Knuth polled his colleagues to find a name for these equivalent problems, suggesting three possibilities: "Herculean," "formidable" and "arduous." Knuth's respondents tended to reject his suggested names and to supply their own favorites, including "prodigious" and "obstinate," but the winner of the write-in votes was "NP-complete" (NP stands for nondeterministic polynomial) which is a technical term in unsurprisingly obscure language having meaning chiefly for mathematicians and computer scientists. That name stuck among the professionals, but a layman might find it convenient to think of them simply as "hard" problems.

What sorts of problems are classified as hard? One

Gina Bari Kolata, a staff writer in the research news department of Science *magazine, frequently writes about new developments in the field of mathematics.*

Trying to solve hard problems, mathematicians—and even the most advanced computers—are simply overwhelmed by the number of calculations involved. The solution? Perhaps there is none.

Illustrations by John Huehnergarth



Computer working on some hard problems might have to go on computing longer than universe has existed.

example is the traveling-salesman problem: a salesman wants to plan a tour of a number of cities so that he visits each city only once and wants to find the shortest possible route. This problem turns up in numerous guises in practical situations—such as the Bureau of Fisheries problem. The telephone company must solve a traveling-salesman problem when it plans collections from pay phone booths. As Lin explains, the telephone company divides each city into zones. Each zone contains several hundred coin boxes; the phone company supervisors must decide the best order to collect coins from the phones in each zone. Industries are also confronted with traveling-salesman problems when they must determine the best order for a machine to do a group of jobs based on the cost of going from one task to the next.

Mathematicians, lacking proof hard problems are hopeless, hunt for elusive "polynomial" method.

Another hard problem is the bin-packing problem: given a number of identical bins and a group of odd-shaped packages, what is the minimum number of bins necessary so that each package is in a bin and none of the bins overflows? It is a bin-packing problem to decide how to schedule television commercials to fit in one-minute time slots. It is also a bin-packing problem to find out how to cut up the minimum number of standard-length boards to produce pieces of particular lengths.

A hard problem of another kind is what mathematicians call a "maximum independent set" problem—but which can be more easily understood as a "party problem" (p. 96). One homely example: pick from a group of potential guests, some of whom are incompatible, the largest number of guests you can expect to get along with one another at a party.

The only general method of solving these hard problems is to try out all possible solutions until you find the best one. For small problems, this isn't too hard. If a salesman had to visit only four cities, he could plan his tour himself with just a pencil and paper by considering all 24 possibilities. If he had to visit ten cities, it would be considerably harder to try out all routes, because there would be more than 3.5 million of them, although the task is well within the capabilities of a computer. But if a salesman had to visit 18 cities and he had a computer that could test one million routes per second, it would take the computer about 4,000 years to try all possible routes. If the

In this simple bin-packing problem, eight animals of varying weights (set low to keep it easy) must be packed into two freight cars, each of which will hold a maximum weight of 100. There are 256 ways of trying to pack the cars, most of which obviously won't work. Of several solutions, one is to put animals weighing 30, 27, 25 and 17 in the first car; in the other, 40, 32, 25 and 2. Try to find another solution.

salesman had to visit 60 cities, it would take a computer billions of centuries to try out all the routes.

The reason it takes so long to try out all possible solutions to a hard problem is that the number of possible solutions increases explosively (or, as mathematicians say, "exponentially") as the size of the problem grows. In a bin-packing problem, for example, this rate of increase is found by multiplying a certain fixed number by itself each time you add another object to be packed. The fixed number equals the number of bins, while the number of multiplication steps required varies with the number of objects. Thus, if you have two bins and two objects, the number of possible solutions is four (2×2); with three objects, there are eight possible solutions ($2 \times 2 \times 2$); with four objects, there are 16 possible solutions ($2 \times 2 \times 2 \times 2$), and so on. Each object you add multiplies the number of possible solutions.

In a bin-packing problem of this kind, computer scientists have calculated that with ten objects, the possible solutions could be tried in 1/1000 of a second; with 20 objects, trying all the solutions would take about one second; with 30 objects, about 18 minutes would be needed; and with 100 objects to pack, trying all the possible solutions would take more than 400,000 billion centuries (by contrast, the entire universe is only about ten billion years old).

Obviously, exponential-time methods are out of the question for large problems. What mathematicians really want to find is a "polynomial time" method,

Unless a computer's information is carefully encoded, spies and thieves can find it easy picking.

which would require dramatically less computer time. (A supermarket's computer checkout system, tabulating the day's sales, uses polynomial time.) If, for example, a polynomial-time method could be found for a typical bin-packing problem with two bins, the number of possible solutions would be equal to the number of objects multiplied by itself—*but just once.* With ten objects, a polynomial-time method would entail only 100 (10 × 10) possibilities, rather than the 1,024 (2 × 2 × 2 . . . 10 times) of an exponential method. Computer scientists calculate that a problem that would take billions of centuries to solve by an exponential method might be solved in a matter of seconds if a polynomial method were found.

Although no one has ever found a polynomial-time method of solving a hard problem, some scientists have not yet given up hope that someday they may discover one. They retain this glimmer of hope because no one has yet been able to prove that there is no such method.

Some problems, in contrast, are provably hopeless. Certain kinds of theorem-proving procedures and some kinds of games provably require exponential time because the computer must go through incalculably long trial-and-error procedures to try to find the best answer. Mathematicians also suspect that computers will probably never play perfect chess because these computer programs, too, may require exponential time. (Of course computers don't have to play perfect chess to be impressive—they just have to play better than most humans. Scientists have devised programs that enable computers to play very well, and they're getting better all the time.)

In short, it remains a frustration and a mystery to mathematicians that they cannot prove that hard problems are hard. Some mathematical logicians speculate that the internal logic of mathematics prevents people from proving anything about these methods. But the logicians have been unable to decide whether their speculation is correct.

It may seem as if the mathematicians have come to an impasse, but they are learning to live with their inability to find shortcuts to solving the hard problems and are learning to work around or even to exploit this impediment.

Because the hard problems are of such enormous practical importance, many mathematicians and computer scientists are developing methods that work well, on the average, although there is no guarantee that they will work for every possible problem or that the solution arrived at is always the best possible one.

An example of the kinds of methods being developed for approximate solution of these problems is one devised by Ronald Graham, Michael Garey and David Johnson of Bell Laboratories in Murray Hill, New Jersey. They studied ways to solve the bin-packing problem and showed that a method, which they call "first fit decreasing," always gives an answer within 22 percent of the best solution. The "first fit decreasing" method involves ordering the packages according to size, largest first, and then putting each package, in succession, into the first bin in which it fits.

Karp is trying another approach to solving a hard problem. He reasons that even though the traveling-salesman problem is hard when you require your method to solve every possible case, perhaps the problem is not so hard if you only want to solve the typical case. Karp hypothesized that a "typical" traveling-salesman problem is one in which the cities are ran-

domly distributed in a rectangular area rather than clustered together. He then divided the rectangle containing the cities into many smaller rectangles. Each small rectangle would contain only a few cities. Karp solves the traveling-salesman problem in each small rectangle, then pieces the small rectangles back together in order to make a tour of all the cities in the large rectangle.

The main drawback is that the method can fail if the cities are not evenly distributed in the large rectangle. But the method seems to be quite useful in many practical situations.

Many people think the most exciting spin-off from the discovery of hard problems is the idea of using these problems as the basis of a new kind of secret codes. These codes were first suggested a few years ago by Whitfield Diffie, Martin Hellman and Ralph Merkle of Stanford University. The reason the codes may be unbreakable is that an eavesdropper trying to decipher a message would have to solve a hard problem to do so.

Computer crime has burgeoned, costing American business $300 million a year, according to *Business Week*. As an example of how easy it can be to commit a computer crime, *Business Week* tells of a man who called the Federal Reserve Bank in Minneapolis and identified himself as Michael Charles, Midwestern banker. Having illegally obtained the day's code word, he arranged a computer transfer of $16,255 from a South Dakota bank to one in Atlanta. It was six months before Charles was discovered.

The new codes, then, have come at a perfect time. Suddenly a computer-security industry has cropped up. Traditionally, secure codes have been the province of the military and intelligence agencies, but academic scientists are beginning to take an interest in developing sophisticated codes for private and commercial use.

Governments—including ours—are watching to see if mathematicians can make hard-problem codes.

A quest for unbreakable codes

Some mathematicians have been trying to prove that hard problems are, for all practical purposes, insoluble because such a proof would be esthetically pleasing. But Hellman explains that if such a proof could be found, it might also prove that hard-problem codes are unbreakable. Until now, the only way anyone could try to decide whether codes were secure was to attempt to break them. For example, the government recently challenged computer manufacturers to make a code that would be safe for unclassified data. IBM came up with one and certified the code's security by trying for 17 man-years to break it. However, it remains possible that even the experts missed an easy way to break the code. In fact, the IBM code is quite controversial, in part because mathematicians such as Hellman say it can be broken more easily than the government thinks (or admits).

Diffie and Hellman's idea for designing codes is to base the codes on well-studied mathematical procedures that are easy to compute but, once the computations are done, the procedures are impossible to reverse without some secret information. To encode a message, a person would use the easily computed procedure. But any electronic eavesdropper trying to reverse the procedure so as to decode would either have to know the secret information or would have to carry out computations that could take centuries.

The hard problems seem to be a rich lode of procedures on which to base these codes. For example, Merkle and Hellman have designed a coding system based on the bin-packing problem—deciding which of a large collection of numbers adds up to a particular sum. It is easy, of course, to add up any group of numbers from the collection. But it is a hard problem to reverse that procedure unless you know how the numbers were chosen to be added up. For example, Graham says that all the computing power in the

world will not enable you to decide which of a large group composed of 50-digit numbers adds up to a particular number.

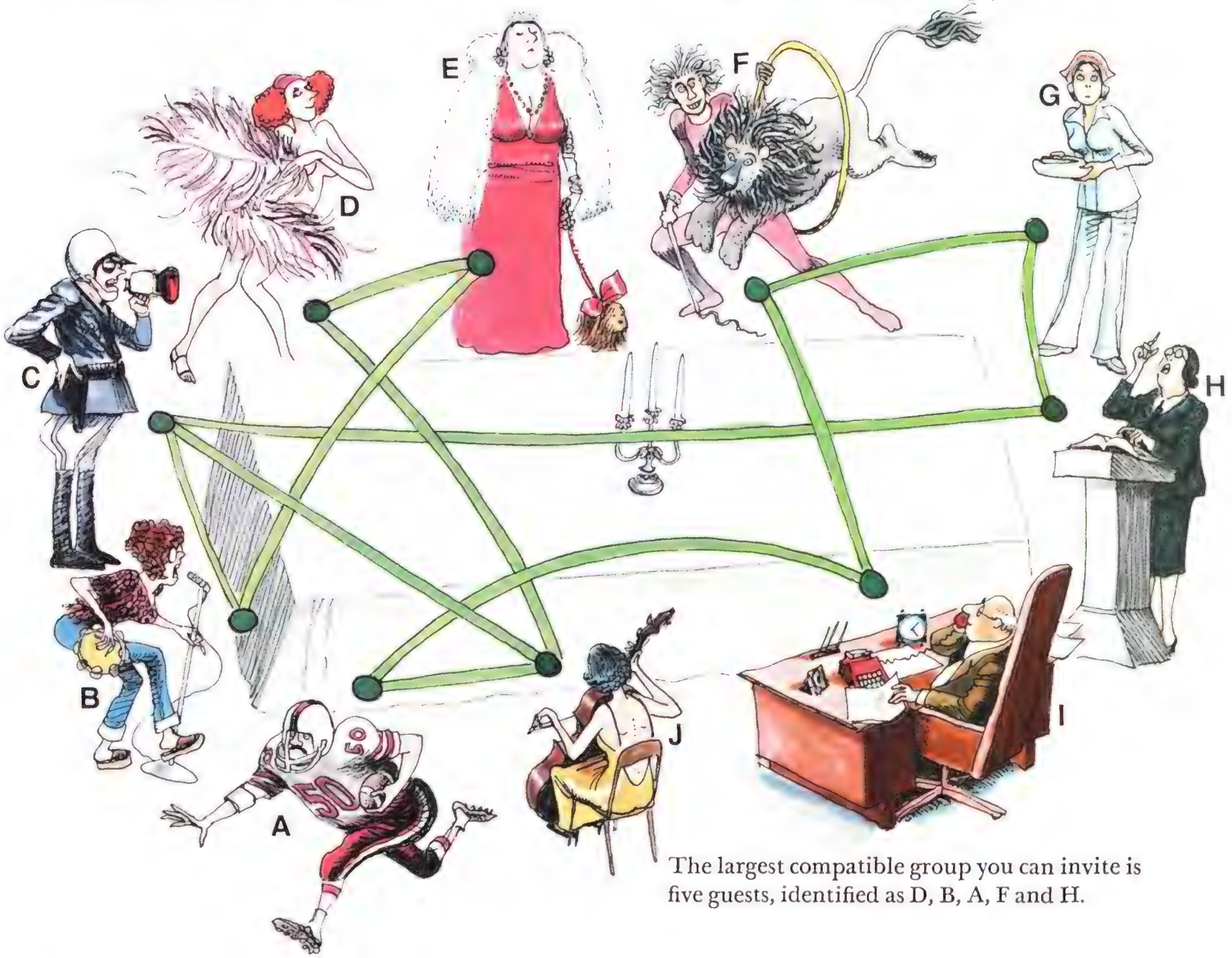
Although it is too soon to say whether the new codes based on hard problems will turn out to be practical enough to replace all previous codes, they are extremely promising. Of course, if someone were suddenly to discover a polynomial-time method for solving a hard problem, any codes based on these problems might be easily broken. But most experts think that such a discovery will be a long time coming, if it comes at all.

The National Security Agency (NSA), which is the nation's code-making and code-breaking agency, seems very interested in the new codes. Hellman and others who are studying these codes are essentially the first academic scientists to encroach on the NSA's territory. Now the NSA is in a quandary. It does not want to supply other countries with instructions on how to make unbreakable codes. Yet there is also the question of academic freedom.

In its newsletter, the Federation of American Scientists expressed concern that any NSA effort to repress coding technology on the grounds of national security could lead to the loss of individual privacy and commercial security of U.S. citizens and businesses. Jeremy J. Stone, director of the Federation, cites a letter from James Madison to Thomas Jefferson saying that frequently the loss of liberty at home is defended on the grounds of providing against danger, real or pretended, from abroad.

It may be, as we move increasingly into a computerized society, as dependent on mathematics as on language, that solving Madison's equation of the threats to our liberty and national security will prove to be the hardest problem of all.

The "party problem" is a type of hard problem: what is maximum number of compatible guests, when you cannot invite those arbitrarily connected by one of the lines between dots. For example, fan dancer (D) is incompatible with matron (E) or female cellist (J) but could come with lion tamer (F), nurse (G), preacher (H), banker (I), football player (A), rock singer (B) or cop (C). Answer below.



The largest compatible group you can invite is five guests, identified as D, B, A, F and H.

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By 1907, when he painted *The Brook,* Sargent was tired of painting faces and their owners, and turned

Ormond Family

back to Impressionist scenes he had given up some 20 years earlier, but now done in rich and thick color.

By Maureen Green

A new and admiring look at elegance of John Singer Sargent

An expatriate American painter, whose models were aristocrats of the Edwardian era, once again is receiving Anglo-American accolades

The last century ended with years that were popularly known as the Naughty Nineties. In the paintings of John Singer Sargent, however, the turn of the century appears less naughty than overwhelmingly grand. An opulent, self-satisfied, confident generation, whose like was never to be seen again, was then captured by a masterly portrait painter whose virtuosity also vanished without conspicuous heirs.

To present John Singer Sargent as a portrait painter in the grand manner, and as an acute observer as well as a unique product of his age, an exhibition—as Anglo-American in its organization and loans as the painter's life itself—has traveled this year from its opening at an Edwardian country house, Lotherton Hall (on the outskirts of Leeds and now part of Leeds Art Galleries) via the National Portrait Gallery, London, to the Detroit Institute of Arts, where it will be seen from October 17 to December 9.

Sargent will be easier to appreciate and reassess in Detroit than in Leeds, where the background of Edwardian comfort and complacency seemed only too recent and claustrophobic. At the opening soiree, *The Duchess of Portland* gazed down from the walls upon pale English faces she must have recognized. But in Detroit Sargent is less enveloped by the society he painted, and a larger perspective is possible.

Even so, Sargent's links with the present remain strong. The Detroit Institute of Arts' curator of American art, Nancy Rivard, first thought of organizing a Sargent show for the Institute during a visit to Leeds

Metropolitan Museum of Art (Arthur H. Hearn Fund, 1916)

She was Madame Pierre Gautreau, formerly Virginie Avegno of Louisiana, who came to Paris and wed a rich banker. Sargent's portrait was shown as *Madame X* because of its daring. It caused a scandal.

The furor over *Madame X,* shown here with him in his Paris studio in 1885, had a lot to do with Sargent's

where she conferred with James Lomax of Leeds Art Galleries and Peter Walton, keeper of Lotherton Hall. When they decided to put together a three-way exhibit, they logically turned to the painter's great-nephew—an authority on his distinguished relative's work—Richard Ormond, deputy director of the National Portrait Gallery in London, as a co-organizer. For two years, all four worked together to persuade many private owners (the lenders are not solely museums) to make do with a mirror over the mantel for many months while their Sargents joined the international exhibit. Many of the English and American portraits and most of the charcoal drawings are being seen together for the first time.

The problems today in trying to see Sargent plain are obvious enough, especially to Richard Ormond, whose definitive study, *John Singer Sargent,* published in 1970, was not only "an act of filial piety," as Ormond laughingly confesses, but also the first attempt to relate Sargent to our own day. "Society portraiture as recent as that of the Edwardian age still arouses hos-

Londoner Maureen Green has written in SMITHSONIAN *on Victorian High Renaissance art (December 1978) and a French family of rose hybridizers (April 1979).*

decision to move to England where he was admired. He took *Madame X* along, thinking it his finest work.

National Trust (Chartwell)

In 1925, the last year of his life, Sargent sketched Winston Churchill as Chancellor of the Exchequer.

tility," Ormond admits. Like his friend Henry James, Sargent was fascinated by the social as well as the psychological characteristics of his sitters, leaving him open now to charges of snobbery. But how absurd it is to feel a chill toward Sargent because he painted not Oscar Wilde but people whom Wilde scandalized.

From earliest years, Sargent was destined to be a painter. Born in Florence to restless middle-class Americans (his father, Dr. FitzWilliam Sargent, was from a New England shipping family; his mother, Mary Newbold Singer, was the daughter of a Philadelphia fur merchant), John and his two sisters traveled about the continent of Europe, led by his mother's romantic urge to see all the cultural sights. He was educated by an enlightened father, who encouraged him to absorb languages and literature, to play the piano and paint, but avoided settling his son into formal schooling. Sargent's mother seems to have had a capacity to inspire, and John began his sketching alongside her amateur efforts. His mother may have been influential in other ways. Sargent never married.

In Paris in the 1870s, Sargent was accepted as a student in the atelier of modernist Carolus-Duran, a friend of Manet, who admonished his students, "Search for the half-tones, place your accents and then the lights . . . Velázquez, Velázquez, Velázquez, ceaselessly study Velázquez." The advice was not lost on Sargent, and on a later visit to Madrid he studied the Spaniard's masterpieces intently, overwhelmed by the fluid technique and treatment of space.

He also became caught in the French enthusiasm for open-air scene painting, the antecedent of Impressionism. A freely painted Breton sea scene was his second work accepted in the Paris Salon, in 1878 (the first, in 1877, was a portrait—*Miss Watts).* Carolus-Duran's "star pupil" then displayed his fluency in a formal portrait of his master for the next year's Salon, and thereafter set up his own studio with the express wish of establishing himself as a portraitist. From Velázquez, from Impressionism and from an enthusiastic study of the bravura pictures of Frans Hals in Haarlem, there was soon, as Richard Ormond writes, "no effect of light on form that Sargent could not immediately record on canvas in a few swift strokes."

At the same time, a sense of underlying psychological as well as visual drama seemed to invade Sargent's portraits, even at this early stage. Commissions came slowly, many of them from the expatriate American community in Paris. Indicative of Sargent's future was the portrayal of the notorious *Madame X* (opposite). Madame Pierre Gautreau, a Louisiana beauty married to a Paris banker, had won a reputation for the abun-

Lent by Sheila Sonne

Annabel Huth Jackson (1870-1944) was a busy hostess, memoirist and daughter of the governor of Madras as well as the wife of a director of the Bank of England.

Art Institute of Chicago (Wirt D. Walker Fund)

Imperious and unforgettable, this was Mrs. George Swinton as Sargent painted her in 1896-7. She had a fine voice and sang for Sargent as he worked.

dance of her good looks and her lovers. Captivated by her "beautiful lines," Sargent begged to paint her, overcoming her languid laziness which made sittings difficult. Sargent was bent on executing a masterwork to clinch his growing reputation, and his many studies indicate the problems he surmounted in achieving the final stylized pose, the intensely chiseled profile. When the portrait was finally exhibited, however, at the Salon of 1884 under the easily penetrated identity of *Madame X*, it caused a scandal. On opening day, elegant Parisian women gathered before it, remarking *"Quelle horreur"* at the sex-symbol sitter, her daring décolletage and the strange lavender hue of her skin. Madame Gautreau's mother rushed to Sargent's studio and begged him to withdraw the picture, insisting that her daughter had been made a laughingstock. Not only did Sargent not withdraw the portrait, he kept it in his possession until 1916, considering it the best thing he had ever done.

The irritations of Paris caused Sargent to enjoy more than ever the summer and autumn of 1884 spent in England, where Henry James, by then a close friend,

Corcoran Gallery of Art

An American diplomat's wife, Mrs. Henry White's portrait was displayed in London, where her husband was posted, brought Sargent many new commissions.

National Galleries of Scotlan

Sargent's *Lady Agnew* (c. 1892-3) was a great success when shown at the Royal Academy. *The Times* called it the best art of its kind in a very long while.

had perceived Sargent's future: "I want him to come here and live and work," he wrote, "there being such a field in London for a *real* painter of women. . . ."

Another unsuccessful Paris winter, followed by summer among English literary and artist friends in the Cotswolds, and in 1886 Sargent was ready to move. Writer Edmund Gosse has left an idyllic description of the Cotswolds interlude: "Henry James and I would write, while Abbey and Millet painted on the floor below, and Sargent and Parsons tilted their easels just outside. We were all within shouting distance, and not much serious work was done, for we were in towering spirits and everything was food for laughter." Here Sargent created his most Impressionist major work, *Carnation, Lily, Lily, Rose* (now in The Tate Gallery), a brilliant evocation of dusk in an English garden.

After a highly successful visit to New York and Boston, where he was received as a celebrity and kept busy with commissions, Sargent became a regular traveler to America.

One day in London, Lady Agnew walked into Sargent's Chelsea studio and settled herself in the chair—

all cream and lilac curves and direct modern gaze. The resulting portrait, "luxurious and dreamy . . . created a sensation at the Royal Academy exhibition of 1893" (p. 105). Sargent was never again to want for a commission. No portraitist alive could compete with his virtuoso technique. Few could convey so perceptively the personalities of his sitters.

As the English upper classes latched on to Sargent and made him the most fashionable portraitist of his day, so tales of sitting to Sargent proliferated. Visiting Sargent's studio at 31 Tite Street was said to be alarming. Though Sargent insisted with some justification, "I chronicle, I do not judge," his reputation as a painter who could perceive the soul thrilled the Edwardians. "It is positively dangerous to sit to Sargent. It's taking your face in your hands," one frightened would-be sitter exclaimed.

Once Sargent had accepted a commission he would allow no interference in the choice of costume or background. Men he directed away from everyday Edwardian suits toward the more pictorial, and more ennobling, military or hunting costume or sumptuous Garter robes. Ladies were asked to bring a selection of outfits with them, preferably evening gowns, but all might be discarded if Sargent wanted another color or to eliminate Edwardian frills and flounces in favor of something more dignified.

The Duchess of Portland, whom he painted at her home, Welbeck Abbey, was arranged in a Van Dyck collar and fancy dress, and Sargent painted the famous beauty's milk-white complexion next to a massive white marble mantel. For the Duchess of Marlborough he designed a dress based on one of the Van Dyck portraits at Blenheim. Sargent met Mrs. Fiske Warren one evening in a dress of green velvet, Ormond tells us, which she informed him she would wear for her portrait, but the painter brusquely told her he wanted her in pink; and pink it had to be, though the dress belonged to her sister-in-law and was much too large. When Mrs. Frederick Osborne's husband criticized his wife's portrait on the grounds that she never wore dresses like that or wore her hair that way, "Sargent was quite unrepentant: 'as if he should not pay extra to be shown how the good lady could most becomingly array herself.' "

The fashionable portrait painter hated fashionable chat. With many he remained silent and inarticulate and turned for help to the newfangled Gramophone for background stimulus. With a few sitters Sargent hit it off more happily. He got on well with poet Coventry Patmore, who wrote to his wife, "The portrait is fearfully like. It is quite ferocious at present. I had much interesting talk with Sargent." Also with Sir Frank Swettenham, romantically portrayed as the epitome of Edwardian colonialism, who wrote: "I sat for him about a dozen times and as he liked talking whilst he painted, I passed many pleasant hours in his studio."

Not everyone found the time with Sargent so pleasant. The man who could do such elevating things to the appearance of others, could do little for himself. By the 1890s Sargent had settled into fat and florid middle age, looking amazingly staid for a painter. In the studio he wore a neat suit and tight collar, anything but flamboyant. In the act of painting, "he rushed bull-like at his canvas, spluttering and gasping, and muttering . . . incantations to himself. . . . 'De-

Ormond Family

The Pink Dress was painted in 1912 in the French Alps. The model was artist's niece, Rose-Marie.

Museum of Fine Arts, Boston (gift of Mary Louisa Boit, Julia Overing Boit, Jane Hubbard Boit and Florence D. Boit, in memory of their father)

Sargent's regard for Velázquez and Hals is clear in this masterful work, *The Daughters of Edward D. Boit,* painted in the Boits' Paris apartment in 1882. His good friend Henry James liked it especially.

mons!', repeated several times, was a favorite expression." Noisy onslaughts alternated with uneasy silences.

Backgrounds were for Sargent alone to suggest. From the late 1890s Sargent began to eliminate Victorian and Edwardian furniture from society portraits, and turn back to a few economical 18th-century details to suggest suitable traditional grandeur. A stylized English park and trees, the edge of a classical urn, created the impression of continuing nobility. A quick glance at the way Sargent could paint landscapes in his Impressionist watercolors confirms how very carefully he chose this other landscape to act as a backdrop for the English aristocracy. Occasionally Sargent was lured out of his studio: to paint the Duchess of Portland or the Wyndham sisters in their own magnificent settings. When he refused to budge, the ancestral background could be brought to him.

Sargent would not go to Renishaw to paint the Sitwell family, but he allowed Sir George Sitwell to bring "his own furniture and tapestry to the studio" to achieve a family group that could be set beside Copley's celebrated *Sitwell Children,* painted more than a century earlier. Edith Sitwell complained of Sargent's picture that her father never embraced her with such a paternal gesture and that her mother never arranged flowers. Sir George complained that "Edith's crooked

nose had been painted straight." Sargent merely altered Sir George's nose and made it crooked.

Sargent never flattered directly, but he was a master of idealization. The Edwardians felt a deep nostalgia for 18th-century elegance and grandeur, and, in responding to this, Sargent interpreted their aspirations acutely. Although Sargent would allow no interference with a portrait once he considered it finished, he was aware of the sensitive feelings of his sitters, especially the women. "Women don't ask you to make them beautiful," he once said, "but you can feel them wanting you to do so all the time." According to Ormond, he drily "defined a portrait as 'a likeness in which there was something wrong about the mouth.' " The faults that were found drove Sargent, claimed one observer, to retire in fury, from time to time, behind a screen in his studio and put out his tongue at the fussing beauties. Yet the likenesses he achieved staggered his contemporaries. Sargent is said to have been delighted when a fellow guest at Welbeck Abbey tapped on the window of the empty room where the Duchess of Portland's portrait had been left to dry, and then complained that the Duchess had ignored her.

After 1900, Sargent began to be appalled rather than flattered at the reputation he had achieved. His position as "the Van Dyck of our times," in Rodin's description, was unassailable; he had made, in Ormond's words, "more money than he knew what to do with." To friends he complained bitterly of the English upper classes and their delight in "paughtraits" or "mugs." To Lady Radnor he wrote, "Ask me to paint your gates, your fences, your barns, which I should gladly do, but NOT THE HUMAN FACE." After 1906 Sargent declined almost all commissions. His occasionally bitter feelings toward his sitters can be gauged from a letter he wrote in 1907 when he had turned to oil and watercolor landscapes and architectural scenes: "I did in Rome a study of a magnificent carved staircase and balustrade leading to a grand façade that would reduce a millionaire to a worm—it would be delightful to paint a rather anxious overdressed middle-aged lady there, with all her pearls and her bat look, and of course never be chosen to do portraits any more."

But it was impossible to escape completely. Sargent's solution was to pour his enthusiasm and experimentation into his murals for the Boston Public Library (and later that city's Museum of Fine Arts) and the watercolor and oil-sketch landscapes made during his continental travels. When in London or Boston he offered lightning charcoal drawings, "mere snapshots," he called them, as a sop to the portrait hunters who still longed to be recorded by "the greatest portraitist of the age." Fluent likenesses in which Sargent "felt no real involvement," the charcoal drawings are nevertheless vivid souvenirs of their times, including as they do his friend the composer Gabriel Fauré, the young Lady Elizabeth Bowes-Lyon (the present Queen Mother) and the fiftyish Winston Churchill (p. 103). To their owners, the drawings became treasured status symbols. One diplomat, posted to London, claimed that the question, "How do you like your Sargent drawing?" got him into amicable conversation with "ladies he had never met before . . . nine times out of ten."

That he had become a venerable Anglo-American institution seemed to interest Sargent little. Bored by the repetition of the same pictorial problems in his portraits, and possibly because he had got the measure of so many of his sitters, Sargent occupied himself with his sketching travels across Europe, accompanied by his sister Mrs. Violet Ormond and her family, and his invalid sister Emily Sargent. Only on very rare occasions, such as the 70th birthday of Henry James in 1913, would Sargent face another sitter. "I am sick of portrait painting," he had grumbled in 1906. After a dinner at Emily's house in Chelsea in April 1925, Sargent, then 69, died in his bed reading Voltaire.

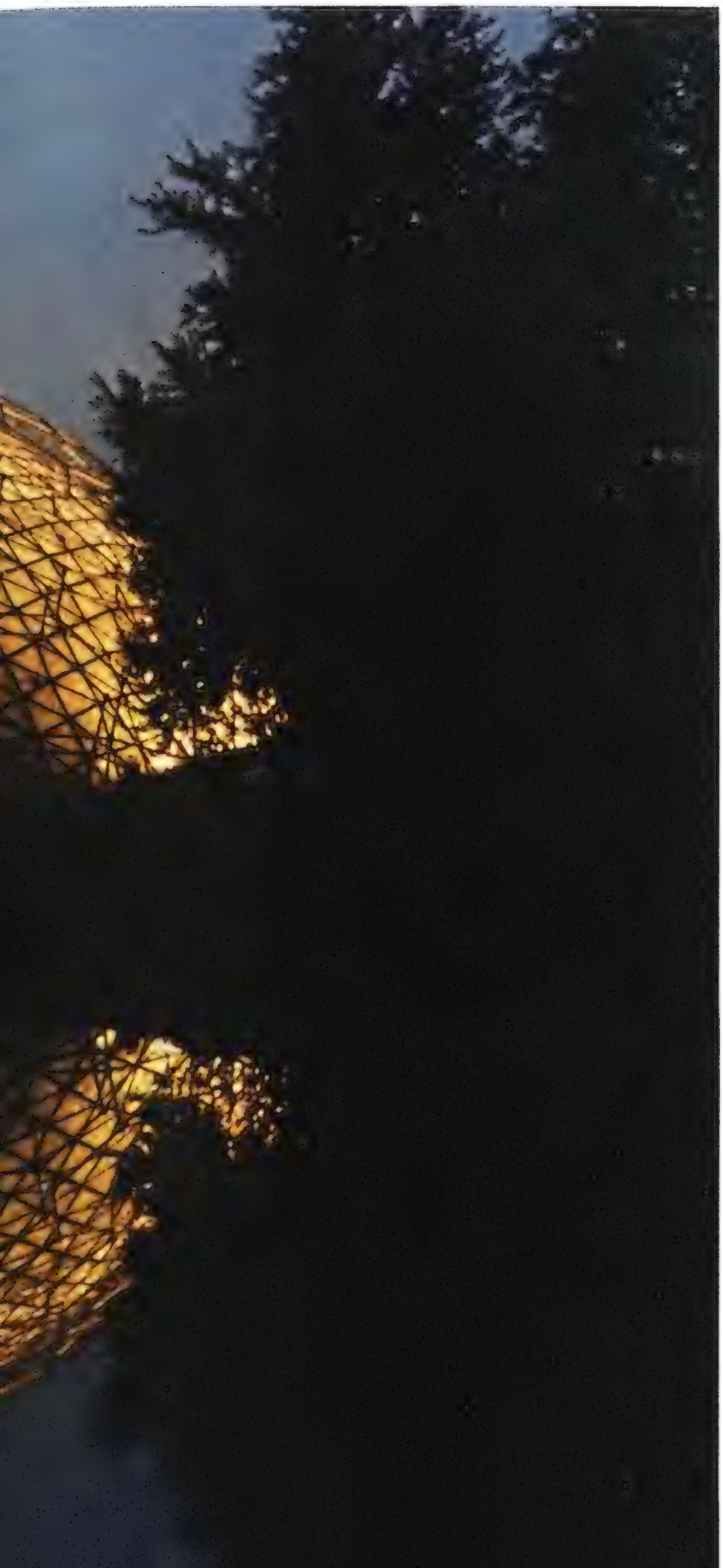
Sargent was a much more complex man and a much more complex painter than either the contemporary adulation or later disdain has until now suggested. Sargent has left a small number of superb portraits and a great number which portrayed some of the notables of his time with verve and style—all witnesses to the aspirations as well as the realities of late-Victorian and Edwardian society. Our own age likes to think that it lacks the pomposity and hypocrisy of that period. It also notably lacks a John Singer Sargent.

Sargent thought this the best portrait of a child he had done. The Honorable Victoria Stanley, daughter of the Earl of Derby, was seven when painted in 1899.

By Annie Boulat

Greenhouses offer modern shelter for world's threatened plants

The 19th-century mania for cultivating exotic plant species in glasshouses is becoming an environmental necessity



From the "gardens of Adonis" in ancient Greece to the modern Climatron in St. Louis, Missouri, is a jump across centuries and continents, but it only shows that gardeners from Plato's time to our own have shared a common desire: to grow plants when and where nature never intended. Plato described what were probably the first forcing houses, where "a grain of seed or the branch of a tree placed in or introduced into these gardens, acquires in eight days a development which cannot be obtained in as many months in the open."

Every age since has added improvements, expanding the uses of greenhouses until today it is possible to walk through an almost science-fiction landscape of diverse habitats laid out under one roof—the geodesic dome of the Climatron. Wandering through this awesome structure, and through its counterparts across the modern world, a visitor is constantly impressed by how universal is the desire for exotic plants.

The evolution of the greenhouse was both ornamental and economic, as exotic plants were cultivated to please both the eye and palate, and in some cases to cure Man's ailments. Columella, a Roman agricultural writer, spoke of Rome as possessing "within the precincts of her walls fragrant trees, trees of precious perfumes such as grow in the open air in India or Arabia. . . ." Tiberius Caesar first put covered gardening to practical use: told by his doctor that he required a cucumber a day to cure an illness, he instructed his gardener to produce a cucumber a day or else! The gardener succeeded by cultivating cucumbers in mica-covered pits which were heated by fermenting dung.

In Roman times, buildings heated with stoves and fronted with *specularia*—thin sheets of mica—were used to cultivate fruits and vegetables, providing the elite with a diet that included peaches, although one writer remarked they tasted more like turnips. Among

The centerpiece of the Missouri Botanical Garden is the Climatron, a geodesic-domed greenhouse with a variety of indoor climates. At left, vast structure is illuminated at night, its image reflected in a pool.

Photographs by Pierre Boulat

the ruins of Pompeii a building of this kind, with masonry staging to support plants and walls with hot air flues, was apparently glazed with talc or rough glass.

Greenhouse gardening declined along with the Roman empire, and did not reappear in Europe in earnest until the early Renaissance. In the 13th century, Albertus Magnus of Padua was reported to do his entertaining in a fruit and flower garden which was heated artificially, three centuries before the first of Europe's botanical gardens was established at Pisa.

As the Renaissance spread through Europe, reviving culture and commerce, so did the use of greenhouse-like structures. Initially, a craze for citrus plants throughout the Continent and England gave rise to "orangeries," south-facing stone buildings with arched

Victorian spiral staircase, typical of the ornate iron grillwork and filigree that went into 19th-century glasshouses, allows visitors to ascend to upper reaches of the great central Palm House at England's Kew.

Greenhouses at Schönbrunn palace in Austria, behind begonia beds, were built for Emperor Franz Josef. Engineers who worked with Gustave Eiffel helped put up these tallest (95 feet) glasshouses in Europe.

facades pierced by tall casement windows and usually unheated. Orangeries proliferated among the Dutch and English, with their expanding maritime empires, and the French with their sumptuous royal gardens. At first new species brought from abroad were sheltered in them. By the 17th century, these buildings had been improved and adapted to growing "tender greens," from which came the name of greenhouses. With glass roofs to let in the heat and light of the sun, they were sometimes heated by portable braziers.

The age of exploration and colonization of Asia, Africa and the Americas, during which Europeans discovered a wealth of new plants, was the time of greatest expansion of botanical and horticultural knowledge in the history of the world. It brought forth such

Tropical greenhouse at the Jardin des Plantes in Paris was erected in 1937, making it a decidedly modern addition: two other glasshouses here were constructed in 1830, ranking them among the oldest in the world.

At Edinburgh's Royal Botanic Garden, early glasshouses begun in 1823 (left) neighbor others of recent design, engineered with suspended roofs to reduce shadow, automated vents that close in rain.

giants as John Claudius Loudon, whose encyclopedic writings and innovative designs for glasshouses had a vast influence on 19th-century horticulture, and Joseph Paxton, creator in 1820 of the great glass conservatory at Chatsworth for the Duke of Devonshire, as well as of prefabricated greenhouses for the middle class. New techniques and materials of the Industrial Revolution made possible construction on a grand scale. Modern counterparts are no less innovative, as experiments in greenhouse gardening open new possibilities—such as tomatoes grown in the midst of a steel mill, or water lilies warmed by wastes from a nuclear power plant.

The Palm House of the Royal Botanic Gardens of Kew, in Surrey, England, is probably the most famous survivor of the 19th century's mania for exotic plants and exotic buildings. Its noble dimensions (the central structure is 63 feet high, 363 feet long, and is adjoined by two lower wings) are an expression in iron and glass of Victorian engineering virtuosity. In the warm, moist atmosphere inside, where a few sparrows twitter overhead, a visitor encounters giant palms and huge bamboos—some of the latter grow as high as the 63-foot roof in one season—and a great variety of economic plants such as cocoa, breadfruit, coffee and banana trees, many of which Kew's botanists helped bring into cultivation. It was in a Kew greenhouse, for example, that seeds of *Hevea* rubber trees were received from the Amazon and cultivated, before being shipped to plantations in Ceylon and Malaya—launching the great rubber trade in the Far East. Those first seedlings cultivated in this one greenhouse contributed to one of the great changes in modern civilization, the widespread use of rubber in industry and transportation.

In experimental steelworks greenhouse at Ebbw Vale, in South Wales, tomatoes ride up and down on elevators.

The greenhouse at the Edinburgh botanical garden boasts a fan palm from the West Indies that was there when the second greenhouse opened in 1858. A collection of palms had grown through the roof of the first one, persuading the Parliament to vote

At Edinburgh, this female Cycad is a living fossil which traces ancestry to days of the dinosaurs. Fully matured seeds are below reproductive sporophyl (center). The leaves are used in floral decorations.

Of four orchid genera in Climatron, all are native to Americas except Asian *Dendrobium* (upper left). Fragile, night-blooming *Rhyncolaelia* (at left) is

funds for a replacement. Moving Parliament to vote the funds turned out to be easier than moving the palms, however. Some weighed from seven to eight tons with earth at the roots, and required tubs measuring 22½ feet around. One of these original palms still stands in the Edinburgh greenhouse, more enduring than the empire under which it first sprouted.

The Kew and Edinburgh greenhouses inspired others built in elegant, soaring style—at the Jardin des Plantes in Paris, the New York Botanical Garden (SMITHSONIAN, July 1978) and in the garden of Schönbrunn palace outside Vienna, which houses what is probably the oldest greenhouse specimen of all. It is an unassuming plant, a *Fockea capensis*, which looks like a large root and a few thin branches with tiny, tender green leaves. The only remarkable thing about it is its age, for it was brought to Schönbrunn in 1785.

The Victorian style of greenhouse architecture was so popular that it was put to other uses, as in London's famous exposition hall, the Crystal Palace; it also inspired plans so grandiose that they were never carried out, like the scheme of one Paris prefect who wanted

prized—and hybridized—for its fragrance and large, fringed lip. Tiny orchids are *Encyclia;* all of the rest are *Cattleya* hybrids, the familiar corsage orchids.

Extremely rare *Espeletiopsis,* a tree composite related to the sunflower, is native to the *páramo,* high, bleak region of Colombian Andes. Here, it thrives under fluorescent lighting at Tübingen.

to connect every street in the city with iron and glass arcades, webbing all Paris with covered galleries.

But the advent of electricity, air conditioning, computers and other advances in modern technology have made possible schemes almost as flamboyant as those of that Paris prefect. In the Climatron at the Missouri Botanical Garden, 1,500 different types of tropical and subtropical plants grow in a variety of climates that resemble their native habitats, allowing a visitor figuratively to walk around the world—from the deep canopied jungle of the Amazon to the dry dog days of India, to the thick mists of Javanese forests and the cool ocean climate of Hawaii. A control center in the Climatron keeps track of weather requirements of the plants in various locations, monitoring temperature, controlling air flow, as gardeners attend to soil requirements of lowland and mountain flora. The Climatron is more than an example of modern engineering virtuosity. It is a step toward more sophisticated use of botanical gardens and their greenhouses in a world where many species of plants are threatened with extinction. The director of the Missouri Botanical Gar-

den, Dr. Peter H. Raven, believes that in the future buildings like the Climatron could be the only places in the world where people can see what a rain forest is like, for within the next 50 years the last of Earth's natural tropical rain forests may have been destroyed.

The Climatron is the very epitome of modern horticultural and engineering genius, just as Kew was the masterpiece of Victorian botanists and builders. But there are many other fascinating experiments in the design and use of greenhouses being carried on in other parts of the world as well. Although even a conventional greenhouse is essentially a solar heat collector, new generations of specially constructed "solar greenhouses" are being tried out in many countries, using various materials and designs to find the most efficient ways of trapping and storing the sun's energy. They are being used for many and varied purposes, from growing fruits that require humidity in arid climates, to growing winter vegetables in northern latitudes while venting the extra greenhouse heat into a dwelling, to reduce fuel bills.

At England's Glasshouse Crops Research Institute in Littlehampton, greenhouses where the air is mixed with fuel combustion products and carbon dioxide are used to study the impact of urban pollution on plants, as botanists search for pollution-resistant species best suited to grow in our cities. At the botanical garden in Tübingen, West Germany, experiments with fluorescent light try to improve the growing conditions for plants raised under glass. In Pierrelatte, France, the site of a nuclear power plant, seven-and-one-half acres of experimental greenhouses have been constructed to recover the heat of wastewater circulating through the reactor. In a similar experiment in Ebbw Vale, South Wales, the British Steel Corporation has constructed an ingenious greenhouse tower (p. 114) among the smokestacks of a steelworks, designed to use waste heat from the industrial plant to raise tomatoes. The tomato plants are grown on vertical conveyor belts and are regularly dipped in fertilizer solution as they move in the brightly lit 70-foot-high towers.

In industrial greenhouse at Pierrelatte, France, water lilies grow in pools of warm wastewater piped from cooling system of nuclear power plant. Some seven acres of greenhouses are heated by this method.

As greenhouses once helped in the introduction of important economic plants to new parts of the world, today there is a significant role for these structures in preserving endangered species and in adapting crops and ornamental plants to modern urban conditions. Not all these experiments will succeed, but they augur a time when people may be able to make anything grow anywhere. The modern greenhouse is not only a thing of beauty; it is a glass cathedral devoted to human survival.

At night, interior of Missouri Climatron is an eerie greenish jungle. Dome is 70 feet high, encloses half-acre area sheltering 1,500 species of plants, some of which may eventually survive only in such places.

Before a snake hunt, a villager sits down to puff on communal pipe of *ganja* (marijuana) honoring one of the snakers' gods. After smoking, the men leave the village walking in curving, snakelike line.

Article and photographs by Peter Skafte

Smoking out secrets of the mysterious 'snakers' in India

An anthropologist learns that the tricks of the snake charmer's trade include training, a bit of sham—and marijuana

The Indian snake charmer who plays upon his long flute as a great cobra sways upward, hood spread wide, is practicing an art whose origins are too ancient to trace. The Egyptian Pyramid Texts of King Unas, dating from around 2350 B.C., include mention of serpent charming, as does the ancient Egyptian *Book of the Dead,* a collection of funerary literature to prepare one for the afterlife. It is clear from the Buddhist *Jataka* texts that snake charming was already established as a recognized profession in India by the third century B.C. This is echoed by the early Greek traveler Nearchus, who commented upon professional snake handlers in India around 300 B.C.

Since that time, innumerable eyewitness accounts of serpent charming have been recorded by awestruck travelers and seasoned skeptics. The general pattern of the performance, with some of its techniques, is familiar. But what about the men who sit behind the flutes? Who are they, and what kinds of lives do they lead? How did they come to follow this strange calling? To find some firsthand answers to these questions, I traveled to New Delhi to spend time with a few of the performers I had encountered several years before. Locating them again proved to be unexpectedly difficult. I searched out all of their preferred places for giving shows: old ruins, tourist spots, national monuments and historic buildings. Not one was to be found. It became apparent, after an afternoon of questioning people in the city, that the snake charmer's personal life is veiled, even from those who associate with him every day. "Oh yes, the snakers, I know them," said a typical informant. "You can find them performing over at the Red Fort."

"I have already looked there and a dozen other places. They don't seem to be working today. Perhaps I could visit them where they live?" I asked hopefully.

"Live?" he repeated, as though I had just said something incredible.

"Yes, their houses; you know, their dwellings."

"Nobody knows where the snakers live," he said with finality.

By late afternoon, my searching had led me past the outer reaches of the city, and I decided to turn back. As a last effort, however, I approached an old man standing by the road and asked him my same weary question. He said nothing, but pointed straight eastward. After an hour's drive down a bumpy road of red dust, I arrived at a village called Bhopura, populated by snakers and their families.

"Snakers" is the term by which these people prefer to be called. They regard themselves as a distinctive caste, comprised of 12 subgroups. As for the beggars on the streets of Delhi who may occasionally carry a serpent or do a few tricks with a reptile, these are held in contempt by the professionals who were born into the world of snakes. Being a snaker is an art and a way of life that necessitates training from childhood. Not only skill, but also right living, spiritual devotion and respect for tradition are required. One of the most important functions of the snaker community is to perpetuate these values.

Snakers are born, not made

Choto Nath has lived in Bhopura all his life. His mother, father, brothers, wife and three children reside there with him on a shady, two-acre plot. As for his age, he is not certain about it, but believes that he is about 30 years old. The subject does not interest him very much. All of Choto Nath's people are Sarsors, one of the 12 subgroups of snakers. This heritage is a matter of intense pride to the family, for everything important in life springs from living out the destiny of who you are. If you are born a Sarsor, then that is your path. As Choto Nath said one day when our conversation had taken a philosophical turn, "You ask what I want most in life. Every day brings wants; some of these you have to let go. But only one thing is truly important to us: to live like our forefathers lived. To follow their ways, this is what matters."

Looking around the settlement, its deep unity with the past was evident. One could imagine the Sarsor forefathers walking the same path to the well, sitting in the same cool beauty of the great pipal tree, and retiring in the evening to the same thatched hut with

Author Peter Skafte, an anthropologist who has worked in Asia, takes lesson in snake charming from one of the villagers. Flute is used to blow on snake and arouse it—the snake can't hear the music.

its smooth mud walls. Only the iron pump at the well, and a few items of clothing (including wristwatches), indicated that the scene was not taking place 200 years ago. The rest was as it had always been.

On the patch of ground where we sat, Choto Nath's father had trained him to handle snakes, as had his father before him. Now Choto's own son, Dari, was old enough to begin learning the art. Only male children become snake charmers. When a boy becomes five or six years old, he is allowed to begin touching the snakes that he has observed all of his life. Previously, he was forbidden to go anywhere near the mysterious covered baskets where the cobras and other snakes slept. In the beginning it is enough just to get used to holding the creatures. Gentle-natured species, such as some of the rat snakes, are wrapped around his neck, and later the more temperamental and dangerous snakes are introduced. The child is also given a small snake flute of his own.

The "snake flute" is not actually a flute, but a reed instrument fashioned of a gourd, two bamboo pipes and, often, one brass pipe. Beeswax holds the joints together and provides a gummy base for attaching decorative coins from many countries. These coins have been collected from tourists during performances. Playing this instrument requires much patient experimentation and practice. Tones are produced by a combination of fingering the holes on the pipes and varying the air pressure with the breath. The tentative squeaks that the young Dari produced on his little flute brought friendly laughter from all his relatives.

Even a snaker's son cannot be expected to love snakes right away. When Choto Nath draped a long, yellow rat snake around his boy's shoulders, Dari's expression of fear and unhappiness was obvious to all. "He is a little fearful," the father explained, "not because he is afraid of snakes, but because he has been bitten three times this month. There was no poison, of course, only a little pain. He will do better in time." The snake wrapped its tail around Dari's upper arm and brought its head up toward his lips. The fork of its tongue darted in and out a few times, exploring the host's scent. Dari stood motionless, holding his breath. The serpent turned again and made its way down the child's back. Relieved, Dari seemed to relax a little. But just to show what the boy was really made of (for my benefit, I feared), Choto Nath came over with a great cobra and rested it on the top of Dari's head (p. 127). Apparently this was too much. The boy's face collapsed into tears, even though the rest of him did not move a muscle.

"There is yet much to learn," Choto Nath commented as he carried the cobra back to its basket. For the young Sarsor and all the other aspiring snake charmers of his caste, there would indeed be much to learn. One must know how to catch snakes, and where. The different kinds of reptiles must be distinguished and their habits understood. Although numerous species of serpents are used in the acts, cobras are the most prized because only they will rise up in the famous arched position. One must also attempt to catch a *ghora,* a foot-long lizard, for it makes a nice addition to the act.

The idea of "charming" serpents originates in ancient sorcery, when certain persons were trained to exert power over reptiles by means of invocations and chanting. Later, musical instruments were added. One

of the earliest functions of the snake charmers was to drive unwanted serpents from houses. Since snakes were regarded as holy, it was unthinkable to harm them. Residents would therefore pay the snakers to persuade the animals to leave.

Historical accounts of snaker activities never fail to link the behavior of the serpent with the sound of the music. A typical description, written around 1880, refers to the charmer seating himself on the ground and beginning to play on his flute. "The snake, on hearing these familiar sounds, comes out of its hiding-place, and crawls toward its master, gliding quietly into the basket in which it is usually shut up." An 1835 observer remarked that even though the cobra is very excitable, it can be readily "appeased, even in the highest state of exasperation, and this merely by the droning music with which its exhibitors seem to charm it. It appears to be fascinated by the discordant sounds that issue from their pipes and tomtoms."

Music charms the crowd, not the snake

For those who realize that a snake has no actual ears and cannot hear the sounds of human voices or instruments, the romance of the flute music is diminished a little. Yet its spellbinding notes do succeed in enchanting the audience, and this accomplishment more than justifies the work involved in mastering the instrument. A young snaker learns, therefore, that he must depend not on his music, but on his physical movements to communicate with the snake. A little intimidation will prove to be the best charm, for a cobra rises up and spreads its hood only when threatened. Often, the snaker will sprinkle a little cold water on the snake before starting his music. This helps to alarm the animal. Then he lowers the flute right over the cobra as he plays so that some of the expelled air rushes out the end of the pipes onto the snake's back. This usually incites it to rise up. Now the matter must be handled with care. If the snake is not challenged enough, it loses interest and sinks back down into its basket. If it is threatened too much, it turns the other way and tries to flee. Neither of these results in a very exciting performance. The snaker's job is to hold the cobra's attention for as long as possible. He attempts this by weaving his instrument back and forth as he plays. If this does not work, he may tempt the snake to strike at him by waving the back of his hand in front of the animal's head. This bony part of the hand can be pivoted quickly so that the cobra's mouth would tend to hit at the wrong angle for fang penetration.

Although New Delhi's snakers do not remove a cobra's fangs (as is done in some parts of India and Pakistan), a special surgical procedure, centuries old, renders the snake's bite nonlethal. An incision is made on both sides of the snake's head about a half inch behind each fang. This severs the duct running between the poison gland and the fang. Thus, venom never reaches the hollow tubes in the teeth that inject poison into the victim. Every poisonous snake that I examined showed the scars of this operation.

Ingenious as this solution is for the snaker's purposes, it does not appear to serve the welfare of the snakes. Most of them showed signs of mouth infection, which would prevent them from eating and eventually lead to their deaths. I asked the snakers how their serpents fed and what they customarily ate. "Milk" was the unanimous answer. Although milk provides some nourishment, it is unlikely that the animals would thrive on it indefinitely. Nearly every snake that I picked up felt too light for its size, and probably had a limited life-span.

Because of this, locating new reptiles is an important dimension of the snaker's livelihood. I wanted to participate in this activity with the Sarsors, and so asked Choto Nath if I might join them the next time they undertook a snake hunt.

"Let's go tomorrow, then," he said, pleased at my interest. "We need a few more snakes, anyhow." I was ready at eight the next morning, but found that no one was in a hurry to begin the hunt. Many family members were milling around, including brothers, uncles, nieces and other Sarsors. The only piece of furniture the family owned—a long wooden bench with a woven rope seat—was brought outside and placed under the great fig tree. "Before we go to find snakes, we will smoke *ganja,*" said Choto Nath, taking out his pipe. The *ganja*—marijuana—was smoked by

While snakers charm cobras, a variety of harmless serpents writhe about, adding to illusion of danger.

A short walk from village, in barren rice paddy, snaker catches a rat snake and pulls it from its hole.

the men of the group before all important snaker events. The pipe was passed around. Each participant puffed huge clouds of smoke without coughing. I had trouble holding the pipe correctly, for it is necessary to wrap both hands around the stem in such a way that one inhales between the thumbs. An advantage of this method is that nobody's mouth comes in direct contact with the communal pipe.

"Bhom Bhom Bho-la!" Choto Nath shouted without warning.

"Pardon me?" I asked.

"Bhom Bhom Bho-la. You must always say that when you smoke *ganja.* It is a greeting to our god, Shanker Bhola. In this way we worship him."

"Bhom Bhom Bho-la!" I exclaimed in all seriousness. Everyone laughed, including the women peeking out from behind the door of the hut.

"Do you honor any other god when you work with snakes?" I asked, when the mood had settled down into seriousness again.

"Yes," Choto answered, "we worship Gorakh Nath and Konipha. When we have caught a snake the whole family also worships Nag Dewata by drinking and eating sweets together."

For the snakers, as for many other non-Westernized Indians, the spiritual dimension of existence is so intimately merged with the material dimension that they cannot be separated. Events in the physical world are regarded as visible expressions of powerful spiritual forces in the unseen world. It therefore makes sense to address issues directly at the spiritual level, where they are believed to originate. It is appropriate to thank the god Nag Dewata when you catch a snake, because all snakes are physical manifestations of Nag Dewata, and he has graciously allowed you to catch part of himself. In light of this orientation, it becomes clear why the snakers place such emphasis on preserving their traditional values and observances. It provides a guide for dealing with the spiritual world—the "real world."

The morning was passing quickly. After much *ganja* and *Bhom Bhom Bho-la,* the men stood up and gathered their equipment for the hunt—digging sticks, hoes and a few baskets. None of the younger boys was permitted to accompany the party, since this aspect of snaking involved genuine danger. Grappling with a poisonous snake in the confusion of tangled weeds, unable to see what other serpents were hiding there, could spell tragedy for a careless boy.

As a last gesture to the snake gods, we began the trek in a single s-shaped line, moving from side to side as we walked to imitate the path of a snake. I expected that we would have to hike an hour or two before we came to a terrain that looked like "snake country." The land around the village consisted primarily of sparse and barren rice paddies, their old stalks baking in the heat of the dry season. But the snakers headed right for these fields and announced after only ten minutes, "There we will find snakes."

Choto Nath approached a clay dike that separated two fields. Such dikes were studded with holes along their sides, most of them made by rats and other small rodents. Choto began examining each hole, looking for freshly disturbed dirt or other evidence of snake activity. The other Sarsors spread out along the dike and did the same. Within four minutes there was a shout. Norbu, Choto Nath's brother, had found a snake. He was holding on to its tail as it struggled to pull itself back into the hole. Several snakers had to excavate diligently to dig out all five feet of the snake.

Snaker bitten as he displays *gondh* snake (left) selects antidote from medicine basket (center) and applies magical black object to draw venom from bite (right). Author later learned *gondh* was not poisonous.

But at last Norbu held it up for all to see. It was a yellow rat snake. "Nice," Choto Nath approved. "That one does not have a passion for biting men."

The next snake they found had passion in abundance. It had been curled up in an old pile of abandoned bricks on the banks of the rice paddy. When Choto Nath's nephew, Ram, removed a brick, the creature sprang straight at him with remarkable force. Ram leaped out of the way. The snake landed on the ground and began striking the air in all directions, while propelling itself toward the pond. After an alarming scramble, Ram managed to grab the snake behind the head where it could not bite him. He dropped it into his basket. "It is always that way with a *gondh*," Ram said, as they started back to the village. Two snakes were enough for the time being. It was pointless to capture more than one needed.

Returning to the Sarsor settlement again, we could smell a spicy curry dish being prepared by Choto Nath's mother and wife. Silent, unobtrusive, hovering in the background, the snaker woman nevertheless is a powerful force for holding household and community together. While a snaker boy is being trained for his future occupation, his sister is being prepared for her eventual role as wife, mother and home keeper. She is taught how to cook over the open clay hearth in the house; she is taught to keep a house properly clean by spreading a layer of fresh cow dung on the floor and walls periodically; she learns to buy and trade goods at the village market, gather dried cow dung for fuel, care for children, maintain good relationships with the household deities. All this must be handled by a woman while her husband earns money in New Delhi, charming coins from tourists with snake shows.

Although a Sarsor girl grows up as a Sarsor, she will not remain one after marriage. She must marry a boy from outside her group and go to live with his family. Contrary to the typical Indian pattern, the Sarsor father does not give a dowry of money and gifts upon his daughter's marriage. Neither does he sponsor the wedding feast and celebrations. Instead, he expects the groom's father to provide all these things and, in addition, to give him money and gifts in exchange for his daughter's hand.

In the pipal tree above, a flock of birds was creating a great commotion, as they love to do at the end of the day. I wanted to take some photographs of the remarkable springing snake that we had caught that afternoon. Not wanting to rush the snakers, but fearing that I would soon lose the sunlight, I encouraged them to bring out the snake. Without ceremony, Ram opened the basket and hauled the creature out by its tail. It immediately sank its teeth into Ram's shirt.

"Be careful!" I shouted. "It's going to bite you!"

"A bite is nothing to a snaker," Ram said, with intentional offhandedness. At that moment, the snake closed its jaws upon Ram's other hand. He flinched, but stoically regained his impassive expression until I had finished taking my picture (above).

"Are you hurt?" I asked, realizing what a useless question it was. "Will he be all right?" I turned to Choto Nath. I did not know at the time whether or not the snake was poisonous, although its physical appearance suggested that it was not.

"Yes," answered my companion. "But when a poisonous snake bites a snaker, he feels pain only for a

few minutes and he suffers no harm because he uses the *Jahar Mara.*"

The medicine basket was brought out. This collection of herbs and parts of animals, powders and power objects, feathers and one small live snake, had among it the most important medicinal item for a snaker—the *Jahar Mara,* a black disk about the size of one's index fingernail. The Sarsors told me that, in order to obtain the *Jahar Mara,* you must catch a certain type of yellow toad found only in the mountains. You then assault it and bury it in the earth for seven days, whereupon it will turn black. A small piece cut from this is the snake medicine. It was believed to possess the power of drawing the poison from the wound and of dropping off when this is accomplished. Part of the snake charmers' mystique through the ages has been their claim that they have secret remedies for poisonous snakebites.

Ram placed the black disk on his hand where the snake had bitten him. He seemed calm. After about ten minutes, the *Jahar Mara* fell off, a sign that it had done its job.

I learned later that the *gondh* snake that had bitten Ram was not poisonous. It is characteristic of the snakers that they would exaggerate the dangerousness of their animals. They are, after all, true performers, and creating a sense of drama around their work is absolutely essential to their survival. This is most evident when they give shows on the streets of New Delhi. They depend on people's ignorance and fear of snakes for producing an emotional impact. They allow snakes of all descriptions to slither from their baskets and wind their way toward the feet of the horrified audience. Not one of these serpents could injure anyone more than superficially, but most of the onlookers, except for an educated few, believe that all types of snakes are deadly.

The ability of snake charmers to handle these creatures must appear marvelous to the uninitiated. For further effect, the snakers keep a harmless large lizard (the *ghora)* on a string, allowing it to walk up and down in front of the crowd. This lizard "could kill you with one bite," they solemnly assure everyone. They hope that, at the end of the performance, the crowds will remember the immense risks taken by the snakers and will show their appreciation by depositing coins in the donation basket passed around by a young troupe member. This is the hope, for the snaker has no other means of livelihood.

"What is the worst thing that ever happened during a performance?" I asked Choto Nath one day while we sat cross-legged on the long bench. I expected him to say, perhaps, that a snake had bitten someone in the audience, or that none of the cobras would budge from their baskets. I was wrong.

"I was working with my snakes near the Jama Masjid," he said. "Many people were there. I hoped to get a good number of coins from the show, because it was a good show. Then I saw Nar, the *dhami* [a magician, or shaman], standing on the street. These *dhamis* hate the snakers because we have power. They are jealous because we have been here from the time when people first walked on this Earth. They fear that we will send poison snakes to where they sleep at night. Nar came straight up to where I sat with my baskets. I knew he was going to do something bad. Then he pointed at me with the backside of his hand, and his eyes looked wicked. The song I was playing on my flute stopped then, and only a small squeak came out. The *dhami* had put bad magic on it. Try as I could, no more music would come out of my flute that day."

Listening with fascination, I reflected again on the sense of aliveness, of intentionality, of meaning that characterizes the snaker's personal world. He leads a life that few would desire, yet for him it is brimming with purpose and depth. As he hoists his snake baskets on the pole across his shoulders and heads for the city, he relives a moment that each of his predecessors has lived for thousands of years. His occupation is not just a means of subsistence, it is a reason for being. I once asked a very old Sarsor how he felt about his life and his work, now that he could look back on it from the perspective of age.

"I am glad it was given to me to commune with snakes," he said. "Such a thing is possible only for a few. My life—some of it was joy, some of it brought me tears. But the snakes were always good to me."

A young snaker tries to stay calm and hold rat snake around his neck, as father rests cobra on his head.

By Michael Olmert

A unique library that chronicles dawn of science

An immigrant industrialist and scholar has given the Smithsonian priceless records of the earliest scientific breakthroughs

Fourteen miles off the coast of Plymouth, England, stands a line of partially submerged rocks. They signal the end of the open ocean, where the Atlantic rebels at the confinement of the English Channel. The sea is always rough there, and uncovers itself as a foe to Man and his ships. In an effort to tame those seas, the English selected these rocks as the site for the fabled Eddystone Lighthouse, which was completed in 1698. For five years the 60-foot tower prevented countless wrecks, until it, too, was swept away in a vicious storm.

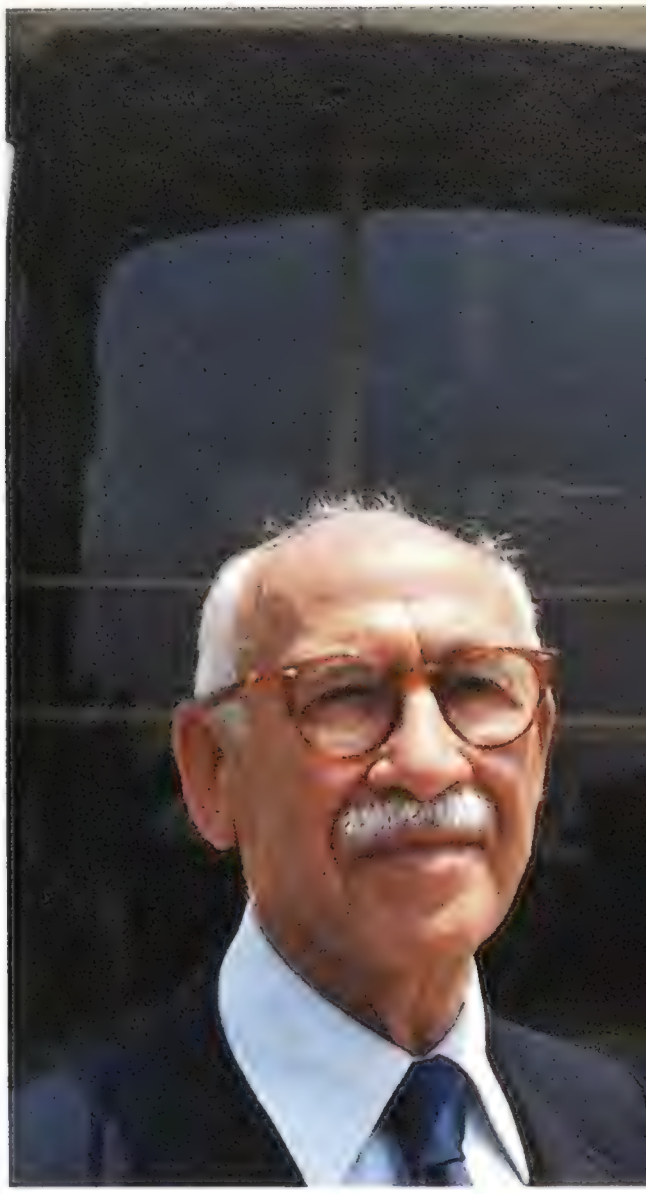
In 1708, while the light was being rebuilt, a French privateer captured the British work party and hauled them off to the court of Louis XIV. Far from rewarding him, however, the monarch was shocked and ordered the men returned to their work, declaring that although he was at war with England, he was not at war with mankind.

The building of that lighthouse—and the king's reaction to it—is among the intriguing tales of the history of science. It is recounted in *Letters and Important Documents Relative to the Edystone* [sic] *Lighthouse,* printed in London in 1811.

Today, that volume and many others are available to scholars in a new history of science library that has been installed as part of the Smithsonian's National Museum of History and Technology. This collection, which now totals about 11,000 volumes, was the gift of Dr. Bern Dibner, an industrialist and inventor who lives in Wilton, Connecticut, and who donated the cream of his own library of more than 40,000 volumes.

Born in the Ukraine in 1897, Dibner came to America with his family in 1904, earned an electrical engineering degree from Brooklyn Polytechnic and then set to work in the electrical power industry. At age 26, while working on plans for the electrification of Cuba, he realized that a major roadblock would be the electrical connectors for branching circuits off main power lines. Almost on the spot, he conceived and patented a clever series of connectors. Later, he formed his own company to manufacture the new design. The Burndy Corporation of Norwalk, Connecticut, now has 27 plants around the world and makes connectors for everything electric, from hydroelectric power stations to wristwatches.

Dibner's interest in the history of science was slower to develop. It was not until 1929, when he read about Leonardo da Vinci in Stuart Chase's book, *Men and*



Donor Bern Dibner at Burndy Library in Norwalk, Connecticut.

Early accounts of waves hitting England's Eddystone Light are depicted in this 1811 plate. Book is part of the Dibner Library.

Machines, that it was aroused. It has grown steadily for 50 years.

Looking back, Dibner recalls, "I was irritated by the preposterous technical feats attributed to Leonardo. I said to myself, somebody has really hoodwinked this Chase fellow. So I set out to read everything I could on da Vinci to find out what his real contributions were. You know, it's half a century later now, and I'm still finding fresh ideas in the Leonardo codices.

"For example, a respected historian of science, Ladislao Reti, once determined that modern industry depends on 22 categories of machine elements—screws, pistons, levers, cams, pulleys and so on. The Leonardo drawings used all but one of those elements, centuries before most of them were formally 'discovered.' " (The missing one: rivets, which Leonardo probably regarded as a simple fastener and not a moving part.)

His awakening interest in Leonardo put Dibner on the road to becoming a historian of science. But it did not make him a bibliophile. That transformation occurred in 1936, when the young industrialist took his family for a sabbatical year in Switzerland.

"Near the Erasmus house in Basel, I bought Volume I of Leonardo's *Treatise on Painting.* The text only; the illustration volume was missing. A few months later, in Florence, I was discussing da Vinci with a bookseller when he suddenly broke off, saying he had something I might be interested in. As he was returning from the basement of his shop, I could see the deep green binding of Volume II. I was hooked."

There was no stopping Dibner after that. Over the next third of a century, he collected everything related to the history of science—books, letters, notebooks and instruments—that he could lay his hands on.

Beasts, some mythical, are depicted in a book about travel to the Holy Land, printed in 1486. Dibner collected some 320 science books printed before 1501.

This bell, originally from Florence, is now at Burndy Library. It is hung from a working model of low-friction bearing designed by Leonardo da Vinci.

Why science? Says Dibner: "First, probably because my own education and career were scientifically grounded. Second, remember that I came to book collecting through Leonardo. It seemed to me that his powers of observation and speculation were wholeheartedly on the side of science. He was a great artist because he was constantly trying to find out how nature worked and how to adopt its subtle workings to improve Man's life. A kind of scientific watchfulness stood behind his paintings."

What Dibner shies from saying is that precious few libraries have exclusively pursued the primary sources in the history of science. During his career, he transformed his company library—called the Burndy Library—into one of the world's greatest repositories of such works.

Take the case of the incunabula. These books from the cradle period of printing (*cunae* is Latin for "cradle") were printed from movable type before 1501. Scholars have estimated that 40,000 titles were printed by that time, but only 1,058 of those books were even loosely connected with science. In a day when a library can count itself lucky to own one incunabulum, Dibner has managed to garner some 320.

During the growing years of the library, it is said that books flowed out of every hallway, office and conference room at the Burndy headquarters. Then, in 1964, a graceful library building was erected in Norwalk to house the collection. From then on, scholars flocked to its shelves.

In 1955, Dibner first published *Heralds of Science,* an annotated bibliography of the 200 most important documents in the history of science. The book is arranged by category from astronomy through zoology, and ranges from Herald No. 1, a 1496 presentation of Ptolemy's universe printed in Venice, to Herald No. 200, August Weismann's 1885 identification of the so-called germ plasm (or genes) as the transmitter of

Michael Olmert, a bibliophile, has written for SMITHSONIAN *on zoo medicine, the illustrator J. J. Grandville and Pope Clement XI's library.*

How one simple phone call saved a woman in a jam.

Based on an actual call made to the toll-free 24-hour Whirlpool Cool-Line® service.

(Telephone Rings)

Cool-Line Consultant: Whirlpool Cool-Line. May I help you?

Woman: It's my Whirlpool garbage disposer. I really broke it this time.

Consultant: The Cool-Line service can solve most problems right over the phone. Now what happened?

Woman: I've had this disposer for five years. It's taken everything. Skins, cores...even my son's plastic car.

Consultant: We don't advise...

Woman: It was a mistake. But even my Whirlpool disposer couldn't handle what I dropped in today.

Consultant: I hesitate to ask.

Woman: You know the metal band that holds the top of a sack of potatoes together?

Consultant: Fell in, huh?

Woman: Jammed things good. So my neighbor shows me how to un-jam it by taking a wooden broomstick and stirring.

Consultant: Right! We...

Woman: Bingo! The jam's gone. I take the metal band out, turn on the water, turn on the disposer and nothing happens. It's my fault. So just give me the name of a repair shop and I'll let you go.

Consultant: I'll be very happy to give you the name of a Whirlpool franchised Tech-Care® service representative. But before you call, let's try one do-it-yourself trick.

Woman: Trick?

Consultant: Under your sink, on the bottom of the disposer, there's a little red button marked "reset." Give it a couple of pushes.

Woman: Why?

Consultant: It's a safety device we build into every continuous feed Whirlpool disposer. It keeps the unit from burning out if it should ever jam. And it helps prevent blowing a fuse. Now push it and try the disposer again.

Woman: It works! You made my day.

Consultant: Happy to do it. If you have questions about any Whirlpool appliance, just call our Cool-Line service.

Woman: Better believe it.

This is the kind of two-way communication we've been having on our Whirlpool Cool-Line service for the past eleven years. It's just one example of the continuing concern we have for customers who purchase quality Whirlpool appliances.

If you ever have a question or problem with your Whirlpool appliance, call our toll-free 24-hour Cool-Line service at 800-253-1301. In Alaska and Hawaii, the number is 800-253-1121. In Michigan, call 800-632-2243.

Whirlpool
Home Appliances
Quality. Our way of life.

heredity. Today booksellers around the world refer to these 200 seminal volumes by their "H.S." numbers.

In 1976, the intellectual heart of the Burndy collection—some 10,000 volumes—was given to the nation. The gift includes the incunabula as well as 85 books that are the only copies on this side of the Atlantic. These form the core of the Dibner Library within the Museum of History and Technology. Silvio Bedini, keeper of rare books for the Institution, arranged the donation and says other collectors are expected to add to this over the years, to constitute a Mecca for scholars of the history of science.

Meanwhile, back in Norwalk, the spry Dibner goes to his office in the Burndy Library at 8 A.M. each workday to oversee his correspondence and to pore over book catalogs. One of Dibner's most appealing characteristics is the way this quiet scholar can instantly transform himself into a delightfully animated guide for even the most neophytic of book lovers. Although he is a small man, he is packed with energy; the stimulation he feels is contagious. Dibner has spent much of his life working only a few feet away from such intellectual milestones as Isaac Newton's 1704 treatise on optics, as well as four-and-a-half pages in Einstein's hand that summarize the general theory of relativity. Close by were Francis Bacon's *Instauratio Magna* (1620), whose title page depicts the new spirit of science as a bright ship venturing forth beyond the Pillars of Hercules, the limits of the Old World; and a copy of Robert Boyle's *Experimenta et Considerationes de Coloribus* (1665), owned by Lavoisier before the French Revolution made him another in a long line of martyrs for science. The list could go on.

The original works of early science were threatened by some rather special destructive forces. Scholars believe that so few early volumes survive because they were used as workbooks or notebooks in the laboratory. There, they became the victims of water, fire and explosions as the Middle Ages came to a close. The kitchen-midden laboratory and conflagration described by Chaucer in his alchemical tale told by the canon's yeoman were all too common.

Other original manuscripts were lost forever simply because their authors never thought to save them. Charles Darwin apparently reused almost all of the pages of his original draft of *The Origin of Species.* As a result, only about 12 pages survive in manuscript form today. The one at the Dibner Library, covering p. 215 in the first (1859) edition, is replete with changes of wording. It constitutes a look inside the mind of a great man at work.

Accidents have frequently seemed to help scientific investigation. From Dibner's collection comes the story of U.S. Army surgeon William Beaumont. At a Mackinac Island trading post in 1822, Beaumont performed an emergency operation on a young Canadian who was accidentally shot in the abdomen. Although the young man was not expected to live, he did—but with a unique anatomy. The gaping wound had left a permanent opening into his stomach, making it a perfect laboratory for studying digestion. Beaumont tied small pieces of food to the end of a silk string, inserted them in the stomach and withdrew them from time to time during digestion. His observations were published in Plattsburg, New York, in 1833, as *Experiments and Observations on the Gastric Juice, and the Physiology of Digestion.* This book, says Dibner, is America's foremost contribution to physiology; it is now known simply as H.S. 130.

The story of electricity seems to hold a special fascination for Dibner, who has written studies of

A Leyden jar and a manikin head with human hair were used by entertainers for electrical demonstrations in the 1700s. A spark from the jar made hair stand up.

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Library preserves the dawn of science

Hans Christian Oersted, Luigi Galvani, Alessandro Volta and the electrical researches of Benjamin Franklin, who invented the lightning rod in 1752. Says Dibner, "When Franklin noted that electricity will make a vain man humble, he was speaking from the vantage point of midcentury, when electricity was a curiosity suited to sideshows and traveling wizards." The Burndy collection contains a number of such devices for generating static electricity, such as a rotating glass jar made in Venice in 1740, one of the oldest in the world. The glass charged a brass collector, from which sparks could be drawn for igniting gunpowder or alcohol, among many other displays. The Burndy also owns a boxed set of glass rods and brass spark conductors that were manufactured for itinerant entertainers. The set includes a manikin's head, complete with human hair, to demonstrate the fright-wig effect of electricity.

It was in this context that Franklin, a very original mind, set to work with his kites, Leyden jars and grounding points. The science of electricity had been born.

Then in 1791, a remarkable document was printed. This was at Bologna, where a professor of anatomy, Luigi Galvani, noted that a dead frog's leg muscle would still twitch when the nerves were touched simultaneously by two different metals. Although he called this effect "animal electricity," he had actually set up an early battery and detected the resulting current. In effect, that result made the frog's muscle the world's first electrometer.

Galvani printed only 12 copies of his pamphlet (H.S. 59), but he sent one to his colleague Alessandro Volta, a professor of physics at the University of Pavia. From that pamphlet came the first battery designed as such, the voltaic pile, which was made of alternating discs of silver and zinc separated by cardboard to hold a moistening brine. Static electricity was now supplemented by a constant electrical source available to experimenters. Volta's results were published in 1800.

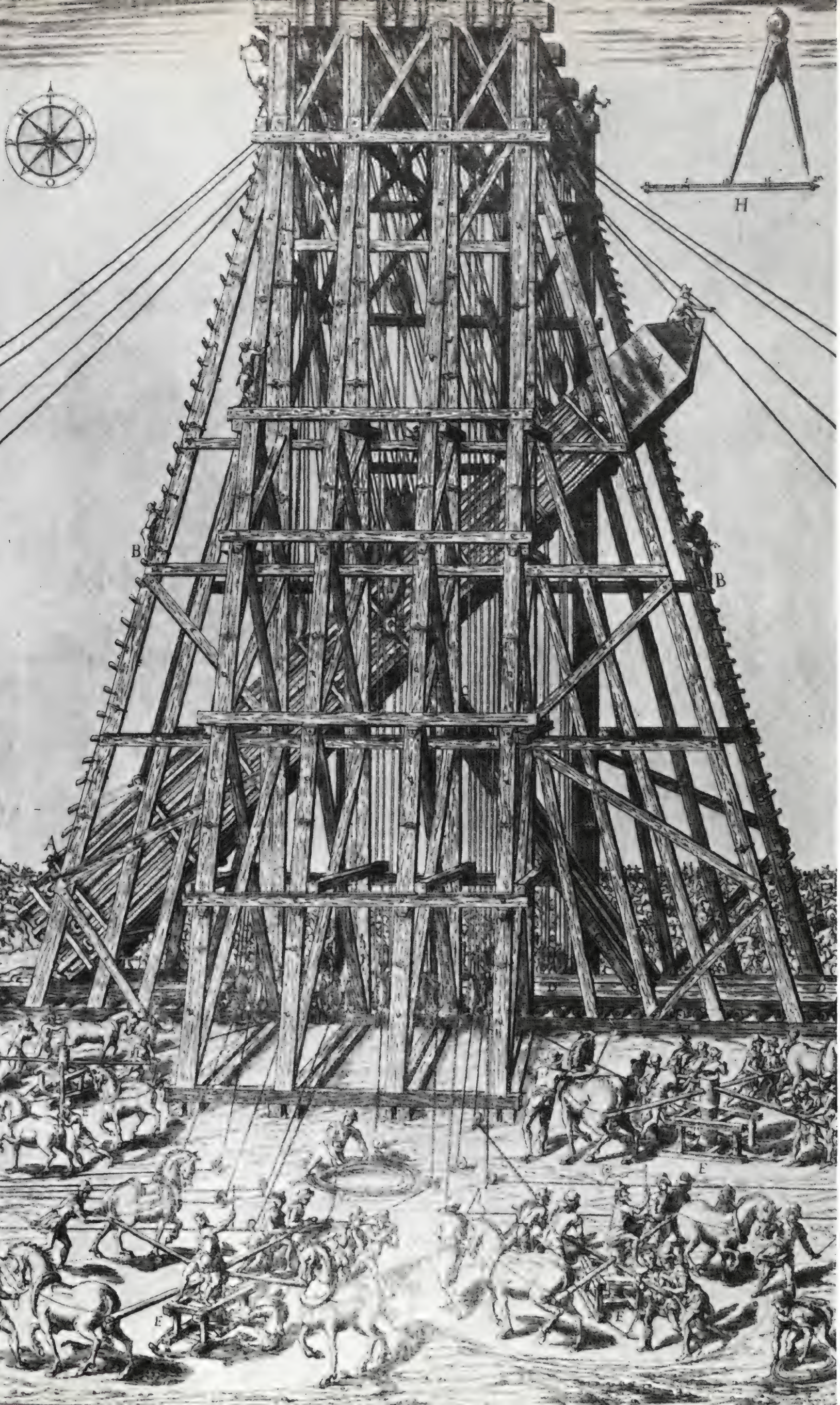
Some twenty years later, the Danish experimenter Oersted, in a lecture to a university group on the general topic of electricity, laid a conducting wire over a magnetic compass. The needle immediately swerved: the link between electricity and magnetism was established. Oersted's results, published in Latin later that year, are part of the Dibner collection.

Then in 1831 another remarkable incident took place. Michael Faraday, working at the Royal Institution in London, had been trying for ten years to do the exact reverse of the Oersted experiment. Since electricity could cause magnetism, he reasoned, why couldn't you use magnetism to generate electricity? Nothing seemed to work. After ten days of feverish activity, the exhausted Faraday went to the Brighton seashore for a rest. During his stay, on November 29, 1831, he wrote his friend Richard Phillips. In four handwritten pages, he outlined the principles of electromagnetic induction, principles that lie behind the full range of 20th-century electronics. "All this," says Dibner, "was accomplished in the 40 years between 1791 and 1831."

Dibner's book, *Moving the Obelisks,* focuses on the 1586 task of shifting the Egyptian obelisk now standing in St. Peter's Square in Rome from Nero's circus 275 yards away. The 341-ton stone required 900 workers and 74 horses to manipulate, using the ingenious rigging devised by a Swiss engineer, Domenico Fontana. According to legend, the success of the move was assured only when a spectator cried out a critical instruction to the massed workers. At a point when slack in the lines and friction on the pulleys threatened the entire operation, a Genoese sailor named Bresca di Bordighera is said to have exclaimed, *"Acque alle funi!"* ("Water on the ropes!"). The water tightened the ropes, cooled the pulleys and produced one of the most famous anecdotes in the history of engineering.

Viewed from our vantage point, the history of science appears as straightforward as that bold and simple command: "Water on the ropes!" If we are to learn anything from the Dibner Library, it is that the best ideas are the simple ones. And if the idea of studying history is to know the past in order to sidestep its mistakes, it should be no different for the history of science. Two centuries from now, some scholar working in Bern Dibner's library will be similarly struck by the clarity of our solution to the energy crisis in the 1980s. At least let us so hope.

Moving a 341-ton obelisk in Rome taxed the best engineers in 1586. A sailor's command saved the day.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Sitting back and well into the saddle, this properly attired, stylish woman could easily follow the hounds. However, for her own safety and comfort she could hardly have made a more perilous choice.

By Gaydell M. Collier

Aside or astride? Change in style of women riders

Emerging feminism at turn of century won out in controversy over whether anything but a sidesaddle was suitable

Riding jockey-style, 20th-century horsewoman in tight pants exercises a horse at a racetrack.

Around the turn of the century, there raged a controversy that threatened the very foundations of morality. The outcome fanned the flames of an emerging feminism, and it was to turn the tide on more than 350 years of tradition.

What question could ruffle so many feathers, forcing wealthy Long Island socialites to defend their femininity, and making Boston matrons shield their daughters' eyes when riding in the park?

It was this: in all decency, should a lady ride astride?

At a time of long skirts, modest collars and puffed sleeves, this question ballooned into a great debate—indeed, a battle—discussed in drawing rooms, argued over in leading magazines, and ultimately the two competing styles were displayed in the hunting field.

There were centuries of tradition bound up in noted English horsewoman Alice Hayes' comment, "Journalists short of 'copy' and women anxious for notoriety, periodically start the notion that ladies should adopt a man's saddle in preference to their own one. Anyone who takes up this idea seriously must be either mad or wholly ignorant."

But women had not always ridden sidesaddle. In fact, the sidesaddle as Mrs. Hayes knew it, and as we know it today, was a 19th-century phenomenon. From earliest records up into the Middle Ages, women either rode astride in a man's saddle, or sat sideways on a pillion behind a man.

So when did women start to ride sidesaddle? Nicetas, a Byzantine historian (A.D. 1118-1205), gives us this clue: "Persian women do not ride as they used to do, sitting on a sidesaddle, but mount their horses with their legs indecently astride." We might therefore conclude that at one time the ladies of the Near East rode decently sidesaddle, and the propriety of this arrangement inspired the Crusaders to bring the new fashion back with them. We do know that the new style had gained popularity in Italy, Spain and southern France by the 12th century, especially with the nobility, and that it gradually took hold farther north. But even then, sideways-riding was for polite occasions; when hunting or hawking, women rode astride, no doubt so that they could stay on the horse.

John Stow's *Chronicles of England* (1580) reports that the sidesaddle was introduced to England in 1382 by Queen Anne, daughter of the king of Bohemia and bride of Richard II. This was a treeless, hornless, padlike affair with crupper and breast collar, and possibly with a footboard to keep the lady's dangling legs from falling asleep. Obviously, it was not the sort of contraption on which one rode to the hounds; indeed, if the lady were to stay aboard at all, the horse could not move out of a walk.

It wasn't until the reign of Queen Elizabeth I that sidesaddle riding was seriously practiced. Some say the Queen adopted the style to hide her crooked legs be-

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As evidenced in this scroll painting, Chinese women (left foreground) of the late 14th century rode astride with all their bulky finery.

neath her voluminous skirts. Perhaps. After she succeeded to the throne in 1558, riding astride took on auras of indecency, and, by the 1600s, a *lady* rode sideways.

Exactly that. Facing west while the horse headed north. So began the 300-year-long evolution of the sidesaddle, from modified pillion to scientifically practical design. Through the 1600s, the saddles were little more than seats placed sideways on the horse. A variety of footboards, backrests and guardrails attempted to improve ridability, but didn't. Finally, around 1700, an innovation did indeed give milady more purchase in the saddle—a tall, slender horn appeared and the footboard departed. She could now hook her right leg over the horn and sit facing more forward.

A good thing can often be made better, and, by 1750, sidesaddles had a lower, more comfortable horn, a knee rest extending to its right, an enlarged fork base to give greater support to the left thigh and a small cantle without a guardrail.

This general design prevailed until 1830, when another innovation finally made the sidesaddle a safer, more practical seat, and paved the way for bringing women back into the hunting field. This was the "leaping head," a third horn, or crutch that curved downward over the left thigh. Actually, this addition gave the equestrienne an exceedingly strong seat: when jumping, or on occasions of stress, she could raise her left heel, pressing her thigh inward and upward against the leaping head while bringing her right leg down strongly against the horn, tightly gripping the two crutches. As she sat back and well into the saddle, this gave a three-point contact that was unshakable. If the horse fell, disaster frequently occurred because it was difficult to get free of the saddle quickly enough, and the horns themselves could impale her. About 1850 one more improvement, the removal of the knee rest to the right of the horn, increased safety and brought the lady's sidesaddle to its best design.

As ladies once again began riding in earnest around the middle of the century, riding habits reached a peak of fashion that was both exotic and ridiculous. The skirts were long and full enough to sweep the ground, a style that could entangle the horse's legs, or even snag on the jumps. Those still using the three-crutch

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saddle, along with the long flowing skirts, either used great circumspection when riding to the hounds or else, by displaying courage and daring far beyond that ever required by a man, rode with positively suicidal tendencies.

Of course, sheer idiocy of fashion is bound to be noticed eventually; thus, by the last quarter of the century, skirts had been modified to a more sensible style. A variety of safety skirts and aprons were tried, but these were spurned by the best horsewomen. Coming in an era of an exaggerated and defined sense of propriety, fashions in riding clothes and manners

In the 15th century, French lady on pillion protects complexion with mask.

were codified in a way that left no room for innovation. One of the great horsewomen of the times, Nannie Power O'Donoghue, wrote endlessly on the subject of riding for women. Her book, *Ladies on Horseback*, published in London in 1881, contains nearly as much advice on how to dress as on how to ride. The Irish equestrienne advises: "For dusty roads a black gauze veil will be found useful, but avoid, as you would poison, every temptation to wear even the faintest scrap of colour on horseback. All such atrocities as blue and green veils have happily long since vanished, but, even still, a red bow, a gaudy flower stuck

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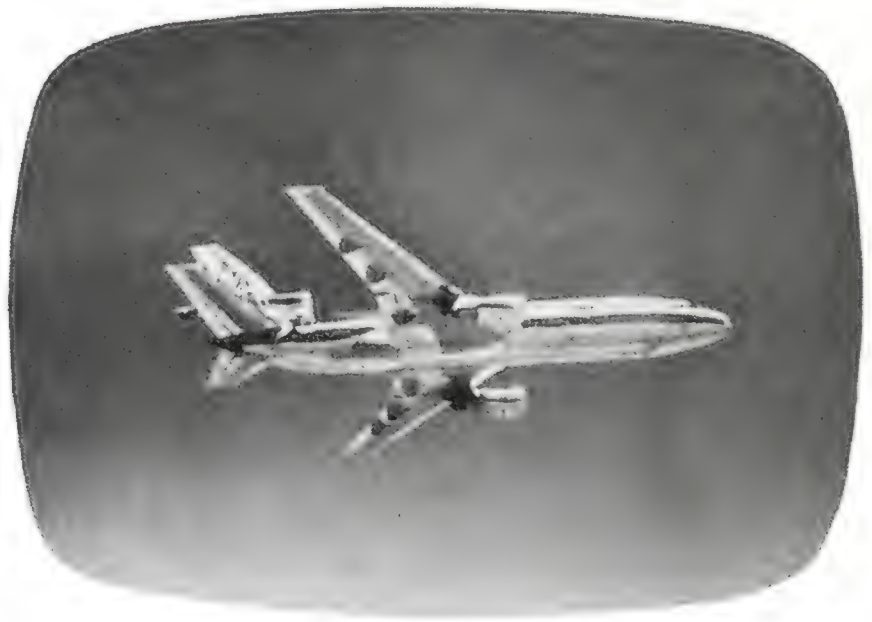

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When riding sidesaddle in 1867, the long, elegant skirt of the fashionable horsewoman gathered water and mud when crossing streams.

in the buttonhole, and, oh, horror of horrors! a pocket handkerchief appearing at an opening in the bosom, looking like a miniature fomentation—these still occasionally shock the eyes of sensitive persons, and cause us to marvel at the wearer's bad taste."

In 1893, Alice Hayes, wife of the eminent horseman, author and veterinarian Horace Hayes, seconded these opinions in her book, *The Horsewoman,* although she did allow dark blue as an acceptable color for a riding habit. Both of these women were excellent riders with a great deal of experience in the hunting field. Mrs. Hayes often traveled on "horsebreaking tours" around the world with her husband. In order to demonstrate his training techniques, he would take a particularly bad bucker, work with him a short while and then put his wife up on a sidesaddle. Standing aside with long reins, he drove the horse and soon had it jumping, while Mrs. Hayes maintained a firm seat in the saddle.

With such women stiffening the already ramrod backbone of propriety, it was no wonder that even a cookbook listed particulars of etiquette in riding. In this milieu, then, a woman riding astride on a man's saddle was not only ignoring tradition, but also flouting propriety, medical opinion (based on the "delicate" construction of the female constitution) and morals. She was, in the minds of many, holding up to ridicule the very grace of womanhood.

Dissent began hesitantly, with a timid knock at the back door of the stronghold. O'Donoghue's *Ladies on Horseback* first appeared as a series of articles, and the magazine also printed some of the voluminous correspondence occasioned by the series. One correspondent observed that Isabella Bird, famed and intrepid explorer of the Rockies, rode astride on a Mexican saddle, and therefore wondered if this style of riding were the custom elsewhere. This gave courage to heretical dissidents. Immediately, a woman cautiously identifying herself only as "Hersilie," jumped in all the way. With more passion than logic she cried, "Oh, no woman would ever be twisted and packed onto a side saddle again if she could help it, after once enjoying the ease and freedom, as well as complete control of her horse which a man's seat gives." Marshaling her arguments, she continued: "I am sure with a proper dress there is nothing to hurt the extremely proper feeling of the modest. . . . Now the dress for the cross-horse style is much the same as a bathing suit, loose Zouave drawers drawn close below the knee and fastened tightly over the boot at the ankle; a loose tunic,

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long enough to come almost to the knee when mounted, lightly belted at the waist, a cape falling over the shoulders, not quite to the elbows. This is my attire when free to ride in the *only* really comfortable way, a foot in each stirrup. . . . Your seat is much firmer; leaping is, oh, so easy; in fact, your power seems doubled in every way. In case of conflict with your horse you feel a veritable centaur compared with the side seat."

One's imagination is challenged by this centaur in a Zouave bathing suit, but the seed was sown despite O'Donoghue's graciously withering reply: "I fervently hope, in the interests of my sex, that such a practice may never be introduced. Modesty is, in my opinion, a woman's most exquisite attribute; once this, or the semblance of it, is lost, her fairest charm is gone. Nothing could be more ungraceful or more unwomanly than for women

Instruction manual shows proper fashion and

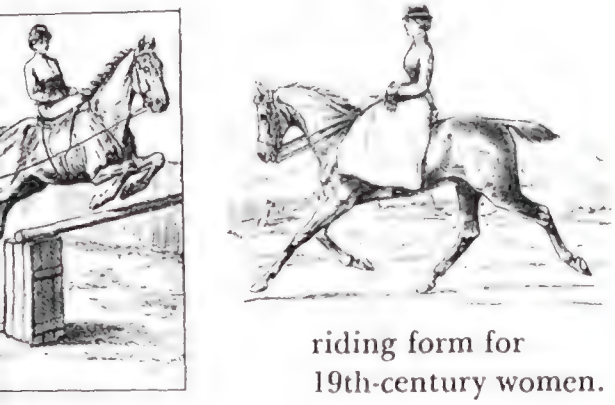
to ride like men; and . . . I maintain that a lady who knows how to sit has a far safer and surer seat on a side saddle than a man can ever have, and that her grip of the pommels affords her infinitely greater security than a man's 'grip of the knees.' "

With the lid temporarily back on the kettle, the heresy simmered quietly, but by the turn of the century the brew had boiled over.

Munsey's magazine published an article in July 1901 by Elizabeth York Miller, confronting the subject head on. "Should Woman Ride Astride? Well, humanly speaking, why shouldn't she do what she wants to?" Thus begun, the article went on to attack the problem from the standpoints of sexism, style, health, safety, the rider's comfort and the horse's comfort, pointing out that the riding academies were naturally against it because riding astride could be mastered "in a very much

fewer number of lessons." Although admitting that chances were against common acceptance of riding astride in the city parks, she remained uncowed by tradition, and neatly compartmentalized the factions: "As for the question of impropriety, it is hard for a true modern to see any in the simple act of striding a horse, while it is impossible for the old fashioned to see anything else. The old and the new must fight it out together till the fittest survives. The result is not hard to foresee, in a generation when women's shoes are no longer supposed to be fastened to their petticoats."

Despite such persuasive arguments, she didn't completely sway the field. In a 1904 *Outing* magazine, under the title "How a Woman Learns to Ride," Mrs. William H. Thompson gave proper instructions on sidesaddle equitation (half of them, like Mrs. O'Donoghue's, on what



riding form for 19th-century women.

to wear) and never deigned to mention the possibility of another option. Meanwhile, Mrs. Adolph Landenburg was riding astride through fashionable Saratoga in broad daylight, drumming up support for abolishing the sidesaddle. In Boston, Mrs. George Barnard, "one of the best New England riders," was riding a man's saddle in a long, divided skirt that covered her toes, while on Long Island, Mrs. Thomas Hitchcock jr. rode cross-saddle in "a riding habit that is an admirable utilitarian costume that does not sacrifice femininity."

Medical opinion was divided as to which style of riding was most, or least, healthy. Some said that young girls learning to ride sidesaddle twisted their backs out of shape, permanently deforming the spine. Others insisted that the side-seat was the only way to ride, because the female constitution would be ruined

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if it were subjected to riding spraddle-legged like a man.

Harper's Weekly in December 1902, dazed with its own daring but attuned to portents, defended cross-saddle riding in the very same words that had been used in the past to defend the sidesaddle: "Unquestionably more comfortable," "admittedly most healthful" and "far more attractive."

By 1905, *Outing,* still cautious but not to be left behind, let Belmont Purdy straddle the problem with benevolent, if wishy-washy, good sense: "There is no question as to whether a woman shall ride astride of a horse or not: she does. Those who prefer the sidesaddle will continue to sit on the side of the horse; while those who like to ride as men do will sit their horses that way."

In 1908, *Country Life* published "A Plea for the Side Saddle," which stabbed with futile desperation at the oncoming tide: "The cross-saddle . . . is an invention of the enemy, fatal alike to grace and good looks in riding." But in 1912, the same magazine carried a well-illustrated article by I. C. Caldwell, "Women Riders and Their Mounts," showing an attractive, tailored costume with divided skirt, and soundly defending the cross-saddle. Incredibly, from Lord-knows-what musty sanctum, the editors appended a comment that may have sounded the last trumpet for the old guard: "Editors' Note: Side-saddle and cross-saddle riding for women are much discussed questions, and both

Queen Elizabeth II rides sidesaddle to formal Horse Guards Parade . . .

Queen Elizabeth I rides sidesaddle when addressing her troops at Tilbury.

methods have their adherents. It is well to bear in mind, however, that one reason side saddles are used by women—and probably always will be—lies in the delicate structure of the woman herself . . . the incontrovertible fact remains, according to physicians, that, taking women in general, their physical organism is not fitted to bear the strain of the position in cross-saddle riding."

. . . but she rides astride racing family and friends to Ascot grounds.

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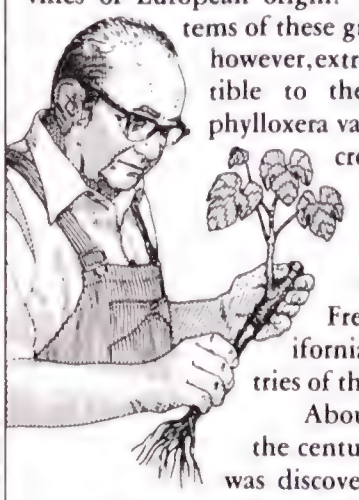
Selecting A Vine

5 Of the many steps in developing a successful vineyard, none is more crucial than selection of the proper vine. In any given environment, different grape varieties will react differently. Not every type of vine is suited for the same growing conditions.

When selecting a grape variety, it is best to consider the general climate of the region, the micro-climate of the immediate area and local soil characteristics. All of these will affect the fruit and, depending upon the variety, the result may or may not be desirable.

The finest wine grapes are borne on vines of European origin. The root systems of these great vines are, however, extremely susceptible to the destructive phylloxera vastatrix, a microscopic member of the aphid family that nearly destroyed the French and California wine industries of the late 1800's.



About the turn of the century, a remedy was discovered by grafting the European vines to the root stock of certain native American vines known to be phylloxera resistant. It was the ideal solution for it provided the protection needed with no loss of grape quality. Today nearly all producing vines in both the U.S. and Europe are grafted to American rootstock. This grafting can be done in the field with an established root system but is more commonly done in a nursery prior to planting in the vineyard.

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Sam J. Sebastiani

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Well, so much for incontrovertible facts. We all know that the sidesaddle faded away, along with the editors. Actually, several events occurred by coincidence but worked together to hasten the sidesaddle demise. The surge of feminism that ushered in the new century culminated in the reordered postwar world of women's suffrage, liberated dress and new spheres of activity. At the same time, the entire theory of horsemanship was undergoing a revolution. The Italian cavalry officer Federico Caprilli had introduced the forward-seat method of riding, scientifically based on the idea of aiding, rather than hindering, the horse in motion. Now riders leaned forward over jumps, rather than backward. This was in direct contrast to accepted sidesaddle riding, where the lady sat well back on the horse and leaned even farther back over jumps. The more daring women, who might have accepted and promulgated the new style, had already turned to riding astride, which now became even easier with shorter stirrups and the forward seat. And so the sidesaddle proponents withered, wrinkled and finally dismounted to the rocking chair. The sidesaddle was dead.

Or so it seemed. But here history took a strange turn. Like cross-saddle riding 40 years earlier, sidesaddle riding went underground. Women who preferred riding aside continued to do so. Out of the limelight, they were dismissed as old-fashioned, but they continued to turn up in the hunting field and on the back byways, and even on trail rides (in 1960, at age 78, Mrs. Fletcher Harper won first place riding aside in the Virginia 100-mile trail ride). And during these quiet years aside riding adapted to the forward seat.

Now, within the last five years, there has been a nostalgic reawakening. The dormant sidesaddle has budded and bloomed with unexpected vitality. Demand for sidesaddles far exceeds supply and has caused frantic ransacking of garage attics and barn lofts across the country. Why? To the modern eye, sidesaddle riding is different, colorful, adding yet another dimension to today's expanding field of riding.

But there is more to the renaissance than costume and nostalgia. According to Charlotte Brailey Kneeland of Mt. Holly, New Jersey, founder and director of the International Side-Saddle Organization and editor of *Side-Saddle News,* this resurgence has probably occurred because "there is no equestrian form as elegant and feminine as riding aside. For those who practice the art, a feeling of grace and serenity, of tradition and style, are all part of the satisfaction of riding aside." She has no doubt this interest will continue to grow, and hopes that it will progress "with dignity and elegance."

Probably the most elegant modern-day example is a group of women in Montana who have formed the Madison County Sidesaddle Club (below). Wearing clothes made from 19th-century designs, they perform throughout several states in rodeos and parades. They do not get paid, but they seem to enjoy the precision and beauty of the sidesaddle drills in close formation.

Does this resurgence mean that women will give up their comfort and return exclusively to the formal style of dress and sidesaddle riding of the past? Realistically, I think not. But what better way to end the controversy than to have it begin all over again?

In Montana, surprisingly, the Madison County Sidesaddle Club prefers aside to astride. Here it performs the intricate precision drill "Wagon Wheel."

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The garden where their love grew was called the Garden of Shalimar.

Shalimar, the most exquisitely voluptuous perfume on Earth, by Guerlain.

Article and photographs by Robert Thurston

Get the message? USSR neon is a happy medium

It's a gas, anything but inert in many exhortatory and playful uses which provide glow on Soviet thoroughfares

In Tashkent, the capital of Soviet Uzbekistan, a sign in Uzbek cautions:

Neon is hardly new anymore (it was christened "the new one" from the Greek, when two scientists discovered the inert gas 81 years ago), but in the Soviet Union it is today as fashionable as blue jeans and twice as omnipresent.

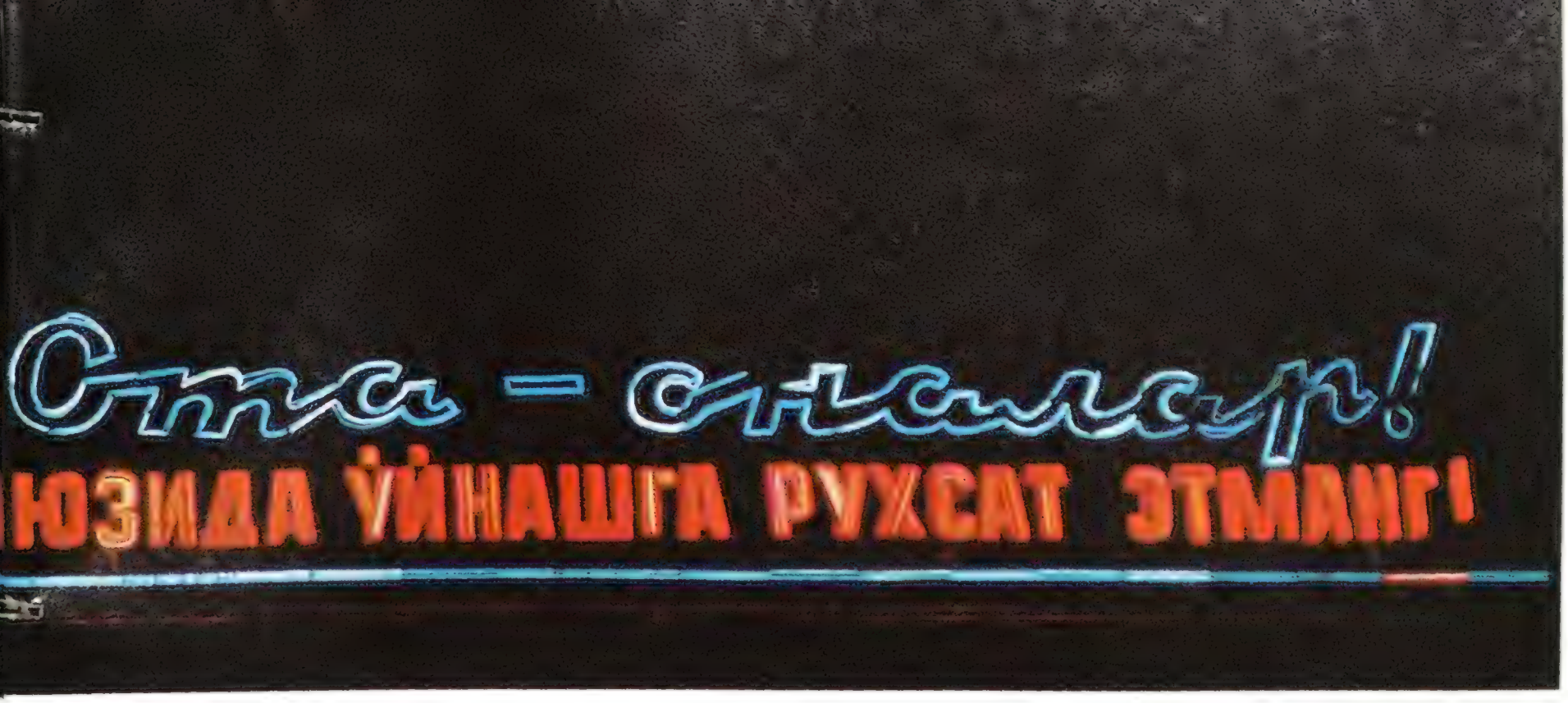
Throughout the USSR, neon signs do all that they do in the West, and more. They advertise products, services and publications. But they also exhort citizens to be careful crossing streets, to put their money in the banks and not play with matches. In the signs' multicolored glow, people are urged to upgrade their pride and political consciousness.

Most Soviet cities close up for the night at 11 P.M. But the neon stays on, even when there is no one to see the block-long signs atop buildings, blazoning helpful hints such as the one in the Uzbek language above.

The role of neon, besides instruction, is to beautify and distract. Take the city of Tashkent, which another American told me reminded him of "L.A. without the fun." Leveled in 1966 by a massive earthquake, this capital of Uzbekistan was quickly rebuilt—as a mass of concrete and glass. Nocturnally at least, neon garishly relieves the monotony. In stately

Sign on Leningrad's Nevsky Prospect: "Taxis by telephone, 210-00."

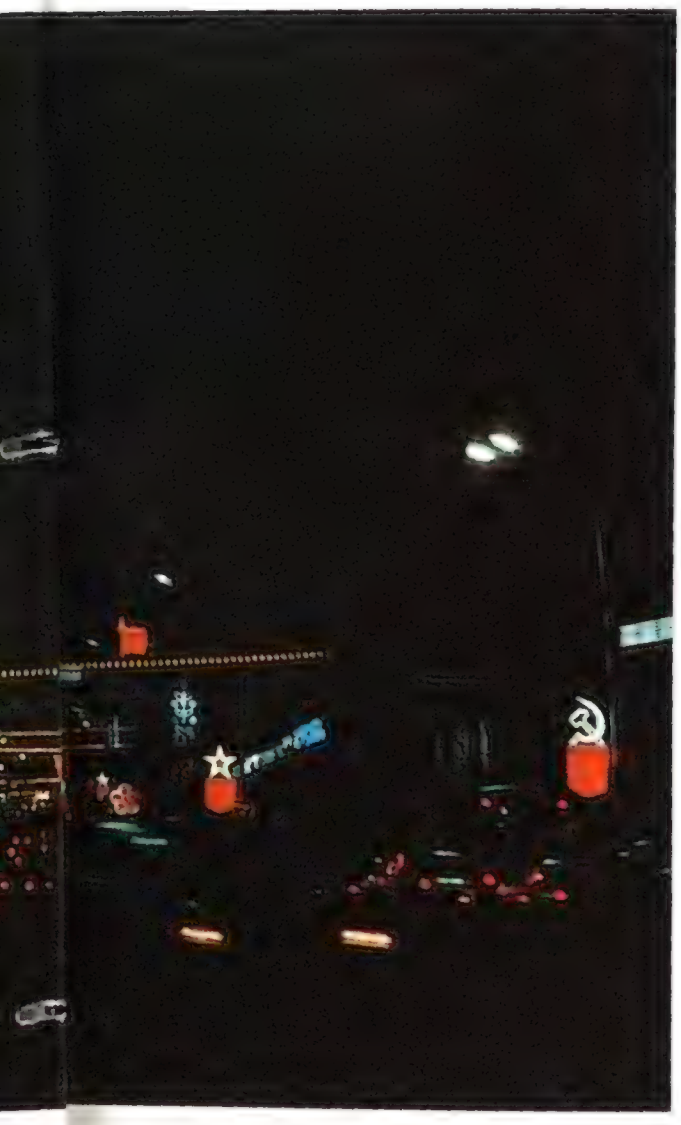
In a nearby shop window a neon rose blooms for International Women's Day.



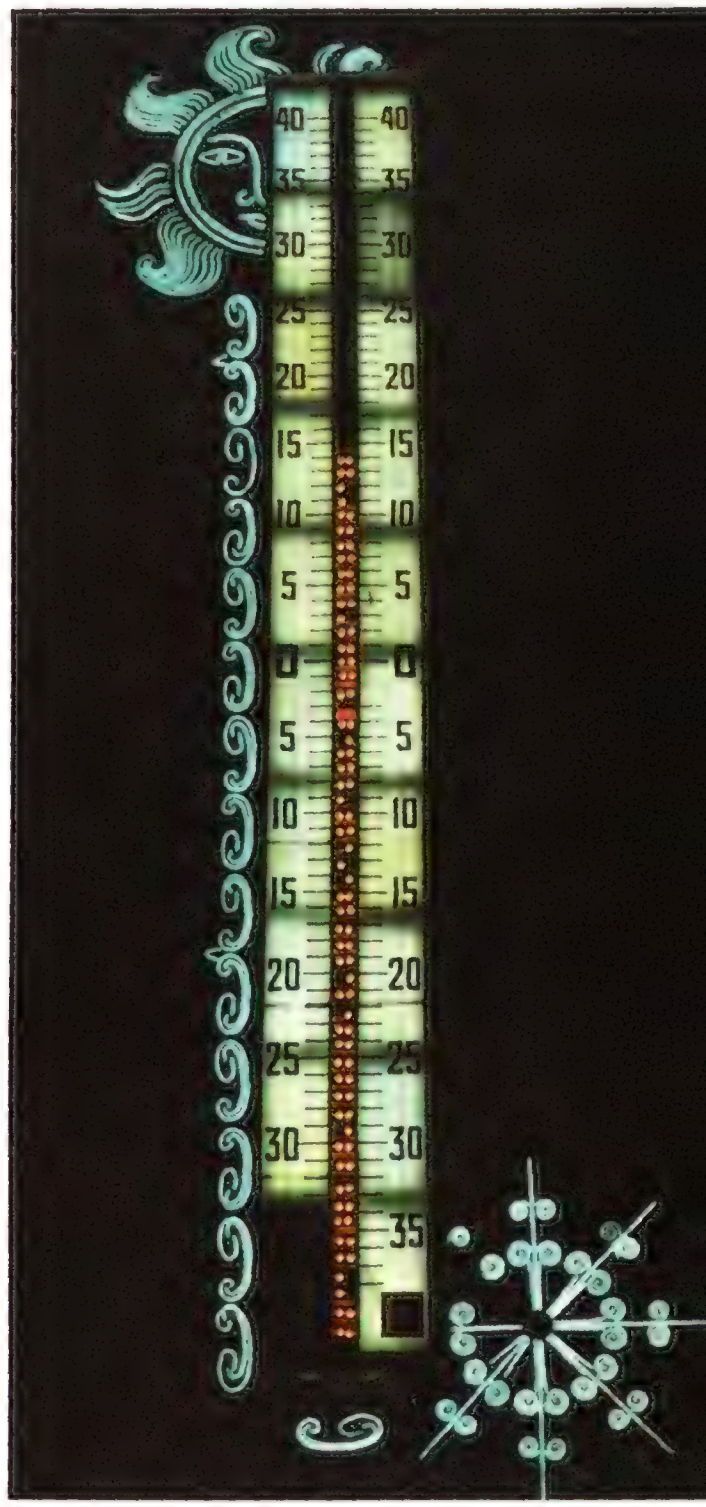
"Fathers—mothers! Don't let your children play games in the streets!"

Leningrad, symbol of the nation's old imperial grandeur, nighttime obscures the architectural beauties of the past and a newer world emerges to shine—in neon.

In all the big cities, custom-made neon signs are put up for national holidays. Such occasions as the November 7 anniversary of the Bolshevik Revolution, the March 8 observance of International Women's Day and of course May Day are times of more gaiety than solemnity for most people. There is much drinking, partying and promenading. On the night of April 30, all of Moscow seems to surge into the streets to have a good time. Amid the outbursts of banners, flags and huge paper flowers, the special neons add their own sense of festival.



Squirrel plugs Armenian candy store. Moscow's Gorky Street is lit up at left.



Last winter, Moscow's coldest in 100 years,—41 C was off of this chart.

Energy symbols in Tashkent—not seen is adjacent Lenin saying:

"Communism equals Soviet power plus electrification of the entire country."

Another neon sign in Tashkent is more succinct: "In case of fire dial 01."

For lunch and dinner, it says here in Leningrad, try cafeterias, dumpling shops.

The sign below tells Uzbeks about convenience and comfort of natural gas.

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Sure enough, as the Vandenberg children reached driving age, the Volvo population exploded. Today the Vandenbergs own seven Volvos, with a total of one million miles on them.

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Cap Anson of the White Stockings was first player to get 3,000 hits, batted .395 in 1894 at age of 43.

Senators' Walter Johnson, the "Big Train," holds the major-league lifetime record for strikeouts.

Detroit's Ty Cobb, the ultimate competitor, has the record lifetime batting average—.367.

Tinker, s. s. Cubs

Chicago Cubs' double-play combination lives on in memory. Ball went from shortstop Joe Tinker . . .

Heroes of yore survive in legend

As another baseball season comes to an end, some cards and memories show the way they were

Baseball is unique among sports in its ability to generate acute nostalgia, and World Series time brings with it an outpouring of sentiment evoked by the heroes of long ago. Say what you will about the Lou Brocks and Dave Kingmans, they are mere men, but the Cobbs and Speakers—immortalized in baseball cards like those shown here—grow more Herculean with each passing year. This season a new memorial—*The Ultimate Baseball Book,* published by Houghton Mifflin—celebrates valiant players of yore. On the following pages sportswriter Robert W. Creamer, in an article adapted from that book, eulogizes one of the greatest of the old teams.

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Giants' pitcher Christy Mathewson won 20 or more games for 13 seasons, 373 in his major-league career.

EVERS, CHICAGO NAT'L

. . . to Evers (Johnny) at second base for the first out. Then Evers threw toward first base . . .

HUGGINS, CINCINNATI

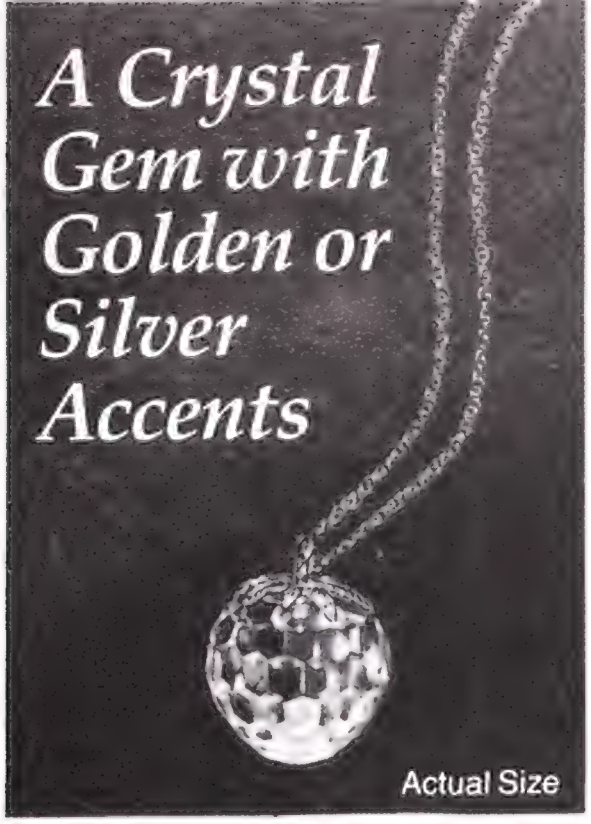
Combative manager Miller Huggins led New York Yankees to six pennants during Babe Ruth's years.

Tris Speaker played for four teams in a long career, and excelled both as hitter and outfielder.

The "Flying Dutchman," Pittsburgh's Honus Wagner, hit .300 or more in 17 consecutive seasons.

Hans Wagner. Pitts. Nationals

. . . to Chance (Frank), completing the play. And there you have it: Tinker to Evers to Chance.



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By Robert W. Creamer

Old Orioles played it close but tore the game wide open

There had been lively teams in baseball before the old Baltimore Orioles came on the scene, but the Orioles were something special. They were for me, at any rate, and for others of my generation, even though they had gone out of existence more than 20 years before we were born.

For kids my age in the 1930s, the Old Orioles were myths, the Titans of prehistoric baseball—baseball history for us having begun in 1901. That was the magic year when the American League came into existence as a rival of the older National League (founded in 1876) and the "modern era" of baseball began. For us, looking back, 1901 was the dawn of civilization; the Orioles—always referred to as the Old Orioles—had flourished in the dim dark days of the 1890s.

(The present-day Orioles, something of a phenomenon themselves, are a completely different team. They spent some 50 ignominious years as the St. Louis Browns before sprouting orange and black plumage in 1954.)

We did not know precisely what the Old Orioles had achieved, but we heard a lot about them. Legend said they were the best of all time before Babe Ruth's 1927 New York Yankees, and the stories always told of the hustling way they played the game; how rough and tough they were; how they played hurt ("We'd spit tobacco juice on a spike wound," John McGraw would say, "and rub dirt in it and get out there and play"); how they invented the hit-and-run, the sacrifice, the squeeze play and other strategic ploys—though these tactics had been in use for a decade or more; how they would deliberately scuff a baseball or discolor it with tobacco juice to help their pitchers; how they would cut corners running from first to third or second to home when the umpire's back was turned; how they would hold a base runner's belt to delay his departure from a base; how they developed Inside Baseball, which became McGraw's gospel, the tight, close-to-the-vest brand of ball that scratched out a run or two and protected it with strong pitching and fielding.

I knew some of the names: McGraw, Wilbert Robinson, Ee-yah Hughie Jen-

Fans jammed the primitive Baltimore ball park in 1897 to watch the deciding game in the pennant race. But the Orioles, alas, lost the game to Boston.

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RAINBOW COUNTRY

In addition to McGraw, Keeler, Kelley and Jennings (pp. 166-67), the mainstays of the Orioles included (middle row) center fielder Walter Brodie, left; catcher Wilbert Robinson, third from right; second baseman Heinie Reitz, far right. In the back row, pitcher Sadie McMahon is second from left.

nings (he shouted "Ee-yah" a lot), Wee Willie Keeler. McGraw played infield and outfield, Robinson caught, Jennings was the shortstop. I knew that Keeler, only 5 feet 4½ inches tall, had once batted safely in 44 straight games—the National League record that Pete Rose, with much fanfare, tied 81 years later—and when asked the secret of his batting skill had replied, "I hit 'em where they ain't."

Who else was on the team? What had they actually accomplished? I had to look it up, as Casey Stengel used to advise his court. To my considerable surprise, I discovered that the Orioles had not been a major-league dynasty but a nova, a sudden manifestation in the baseball skies that flared brilliantly for a very short time and then disappeared. The Orioles had not even been in the National League until 1892, and after the 1899 season they were gone. Baltimore had had a team in a rival big league called the American Association from 1882 through 1891, but those fledgling Orioles finished last five times in ten seasons, and when they finally entered the National League they finished last again.

But things were happening. The Old Orioles, yet to be, began to germinate in 1890, even before they got into the National League. Manager Billy Barnie, known affectionately to Baltimore fans as "Blue Eyed Billy" or "Bald Headed Billy," landed a couple of players from the breakup of the Philadelphia American Association club in 1890: a good pitcher named Sadie McMahon and the catcher Wilbert Robinson. In 1891 young John McGraw appeared in Baltimore—18 years old, 5 feet 7 inches tall, lean as a leather whip (he grew fatter as he grew older) and just as mean. Later that season Baltimore owner Harry von der Horst got rid of Billy Barnie and in 1892 made Ned Hanlon his manager.

Hanlon was the key, a baseball genius with complete confidence in his own judgment and ability. Within a year he obtained an interest in the Orioles and persuaded von der Horst to let him function as both manager and president of the club. He ran everything. Von der Horst, somewhat miffed by this, took to wearing a button in his lapel that he would point to whenever people inquired about his team. "ASK HANLON," the button read.

In Hanlon's first two seasons, 1892 and 1893, the Orioles finished 12th and eighth, but Ned was building a team designed to take advantage of a radical new rule baseball had adopted that lengthened the distance between pitcher and batter from 50 feet to 60 feet 6 inches, which

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New programs, of which the Hamlisch profile is the first, will be produced by Camera Three Productions. WGBH, Boston, will also produce some of them. Most of the programs in this series were originally produced for and broadcast on the CBS television network and were made available to public television stations without charge.

The move of Camera Three to PBS is being made possible by grants from The National Endowment for the Arts and Atlantic Richfield Company.

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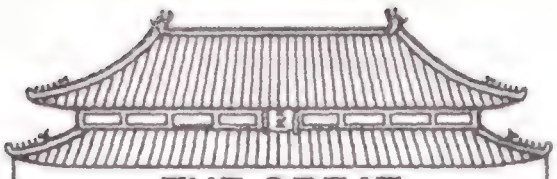

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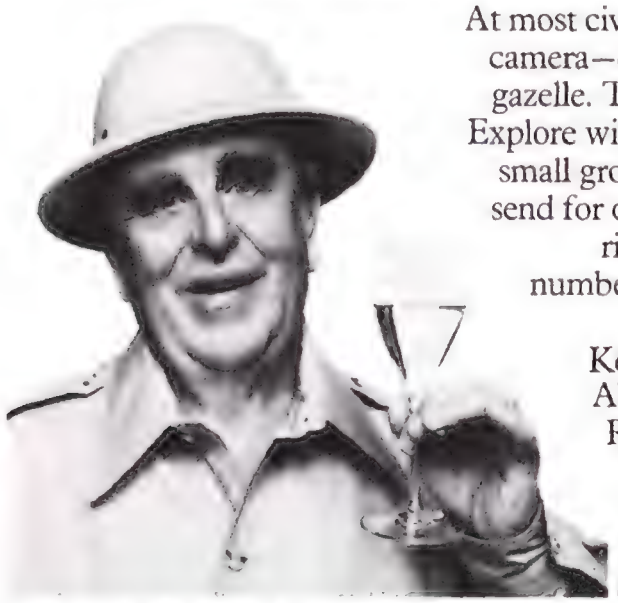

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Ned Hanlon created Orioles, but in 1899 moved to Brooklyn with key players.

is still the distance today; baseball's modern era appears to have begun in 1893, not 1901. The longer distance had an immediate and adverse effect on pitching. Strikeouts dropped almost 50 percent. Batting averages soared. Runs came in great bunches and continued to do so for the next several years. The current major-league record for most runs scored by one team in one season was set in 1894, even though the season was some 30 games shorter then than it is now. Typical scores were 15-10, 18-13, 12-9. Never mind John McGraw and Inside Baseball; the Orioles did not play in an era of 1-0 games.

Hanlon understood immediately that pitchers—who took several years to adjust to the new distance—had become less important. What you wanted were smart hitters who could swing the bat hard, fast base runners who could move aggressively around the bases and score, deft fielders who could cope with the far greater number of batted balls and base runners coming their way. He began wheeling and dealing. He traded a star

Are old sailing ships becoming an

Endangered Species?

What a thrilling scene: a classic square rigger, sails billowing in the wind, rising and falling on the ocean swells! Truly a *rare* sight these days—seen only on television or at specially staged harbor festivals. Or in seafaring museums, where we stand in awe of the tall ship models that the skilled hands of old-time craftsmen created.

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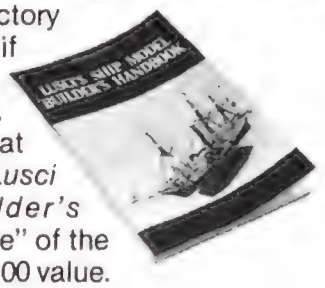

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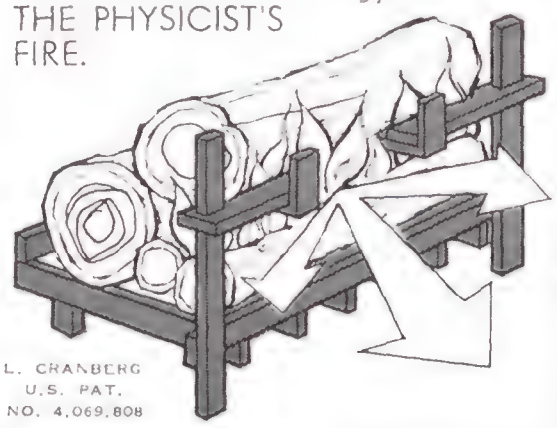

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Baseball cards, popular during Orioles's era, were first printed on cardboard

outfielder for a 20-year-old rookie named Joe Kelley, who was batting only .239 at the time; Kelley, a beautiful fielder, became the best all-around batter on the club. (For the uninitiated, a batting average of .239 means hitting safely 239 times for every 1,000 times at bat. Anything over .300 is very good; anything under .250 is mediocre.)

Hanlon signed a minor-league second baseman named Heinie Reitz; Reitz fielded brilliantly and led the league in triples. He traded a shortstop batting .363 for another who was batting only .136. That was Hughie Jennings. The other player slumped and was out of the big league a year later, while Jennings went on to become one of the best shortstops in baseball history.

Hanlon purchased a fine fielding outfielder named Steve Brodie, put him in center field and moved young Kelley to left. Then he traded the left fielder Kelley had replaced and his regular third baseman to Brooklyn for an aging first baseman, who had played in barely half of Brooklyn's games that year, and a tiny, left-handed-throwing infielder who had only 41 games in the majors. The doddering first baseman was Dan Brouthers, who played all but five games for Baltimore in 1894, batted .347 and led the team in runs batted in. The diminutive rookie was Willie Keeler, who in his five seasons with the Orioles batted .371, .391, .392, .432 and .379.

Hanlon put Keeler in right field, installed McGraw at third base and, *voilà*, his masterpiece of a ball club was complete. And it *was* a masterpiece. Six of the eight regulars, other than pitchers, are now in baseball's Hall of Fame. Oddly enough, Hanlon, surely one of the fore-

stiffeners used in packages of cigarettes. "Action" shots like these were posed.

most managers in baseball history, is not.

The Orioles began their historic 1894 season by winning four straight games from New York and Boston, considered the two best teams in the league. No one believed at first that Baltimore, with its history of failure, was really that good; but—hitting hard, running bases insolently, fielding superbly—Hanlon's heroes held on to first place for three months. They slumped briefly in midsummer but then rallied to win 18 straight games and 28 of their last 31 to capture their first National League pennant. Every man in the lineup hit over .300 and seven of them batted .330 or better. Their pitching wasn't much, but they led the league in fielding, and only one other team stole more bases. The success-starved fans of Baltimore saluted their first championship team with a tumultuous parade that had 20,000 people snake dancing through the city's streets. "I'm going to run for mayor," joked the jubilant Hanlon.

Sourness followed, triggered by the hot-tempered McGraw, who had a genius for making trouble and enemies. In the infield he did indeed grab base runners' belts, step on their feet, block their way. Other Orioles followed his lead. John Heydler, later president of the National League, observed, "The Old Orioles were mean, vicious, ready at any time to maim a rival player or an umpire." McGraw, apparently, was the prime offender. He was called, "That toughest of toughs and abomination of the diamond . . . a rough, unruly man . . . he uses every low and contemptible method that his erratic brain can conceive. . . ." After winning the pennant the Orioles were supposed to play second-place New York in a post-season series for the Temple Cup, put up

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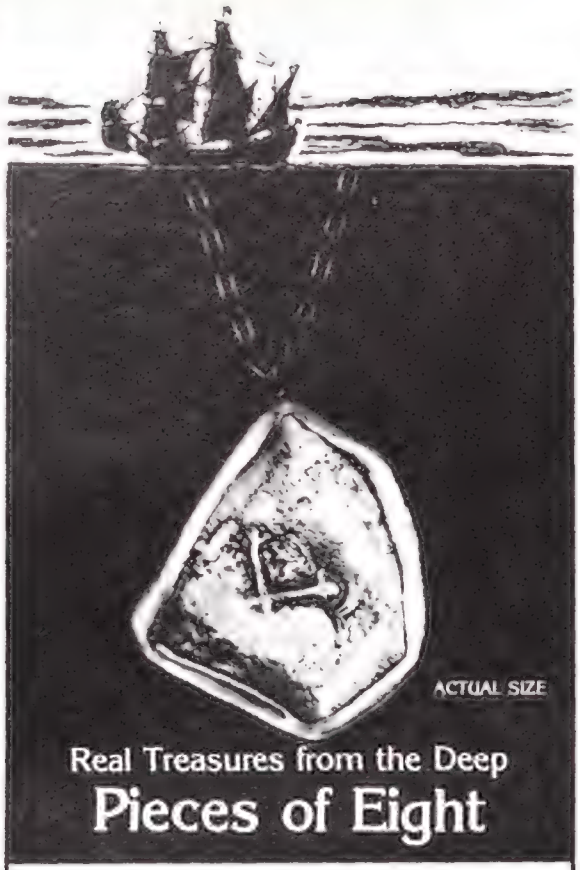

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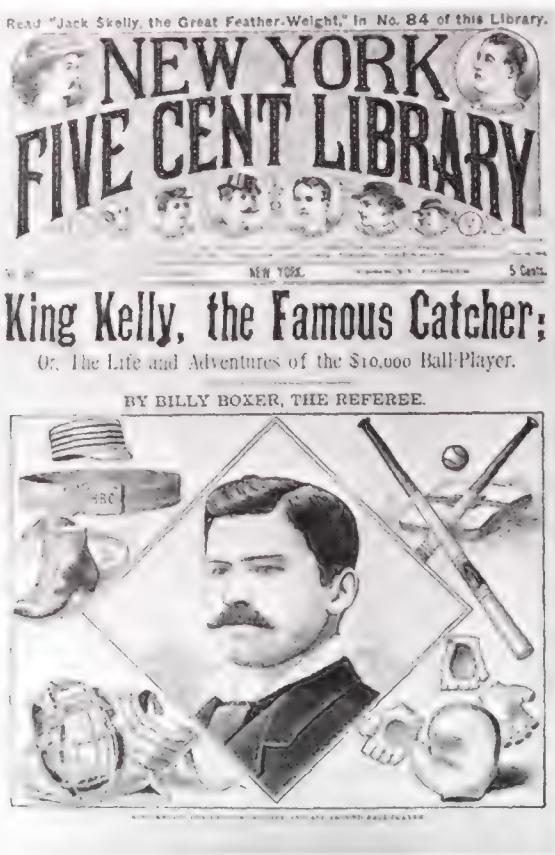
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by William C. Temple, a stockholder in the Pittsburgh club. The players were to divide a purse from the gate receipts: winners 65 percent, losers 35 percent.

The Orioles, prodded by McGraw, balked. Their salaries had ended with the end of the season, and even though they were heavily favored to win the Cup, McGraw argued that the chance they could end up with the meager losers' share made the series not worth playing. Several players on each team made private 50/50 agreements, and the Temple Cup games were an esthetic flop. The Orioles, expected to win easily, played listlessly and lost in four straight. The angered Temple subsequently quit baseball.

The Orioles won the pennant again in 1895, playing desultorily until August when they began another late-season rush to the flag, winning 41 of their last 51 games. Despite William Temple's disenchantment, the Temple Cup series was staged again, and again the Orioles played like automatons, losing to Cleveland four games to one. In 1896 they were stronger, or more spirited, winning their third straight pennant easily and whopping Cleveland four straight times in the Temple Cup series.

McGraw was less in evidence these two

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Text continued from p. 164

They don't write 'em like they used to

Fans who sing "Three Blind Mice" and sports reporters have always given umpires a hard time, but in the Orioles' day writers put a little more spin on the ball. The following is condensed from an 1893 newspaper story about a late-season game between the Orioles and Chicago's Colts.

In these melancholy days, when the sunflower and the crocus, by some magic hocus-pocus, lose the sun's enlivening focus there is absolutely no cuss so gorgeously aggravating as a baseball umpire.

The season wanes. So does the umpire. He strolls out into the diamond with a tired feeling, dizziness, pain in the back, sleeplessness and loss of appetite, and drags himself around with the weary expression of a man who is trying to sneak out of going to prayer meeting with his wife. He calls balls when the horse-hide globe cuts the plate clean. He calls strikes when the ball doesn't get as near the plate as the average tramp does to the thirty-third degree of the amalgamated order of ancient and united laundrymen.

Among other umpires is one Lynch. Mr. Lynch umpired the game yesterday. He proved that he has soft corns on his eyeballs and an ingrown opinion of himself.

Baltimore beat Chicago. Every run they made came through bases on balls. Willie Woolly Hutchinson [the Chicago pitcher] was responsible for some of these, but for the most part they can be charged up to Mr. Lynch.

He is not exactly to blame, either. Autumn is here. You can now strike at a fly and hit it. The cold wind has begun to sing down the chimney, the hired girl has commenced to kick because there is no stove in her room, and all nature seems in mourning.

Has the umpire no right to be sad? This month his salary ends and he has to begin hibernating. There may be some things more racking on the nervous system than a man with a fierce longing for ham and eggs trying to hibernate, but the census taker hasn't shown it up.

If Mr. Lynch will ballast his judgment a little and weed out the moats [sic] in his eyes, Chicago will win today.

seasons. Laid low by malaria and, later, by typhoid fever, he missed 35 games in 1895 and played only 18 all season in 1896. Dan Brouthers, succumbing at last to age, was gone. Heinie Reitz was injured much of 1895. Steve Brodie began to falter in 1896 and was traded after that season. Wilbert Robinson was only a part-time catcher.

But the heart of the club—Jennings at shortstop, Kelley in left field, Keeler in right—stayed intact from 1894 through 1898, and these three, more than any others, kept up the Orioles' reputation for winning baseball. Even in 1897, when they finished second to Boston, the Orioles played superbly. And they routed Boston's pennant winners four games to one in the fourth and final Temple Cup series. Boston beat out Baltimore again in 1898, although the Orioles continued to play excellent ball. In fact, through the five seasons that began in 1894 the Orioles had an overall winning percentage of .679, a figure that applied to a modern 162-game season would yield an astonishing 110 victories a year. The Old Orioles were indeed something very special.

And then, suddenly, it was all over. Hanlon and von der Horst worked out a stock-transfer deal with the Brooklyn club, a bizarre arrangement that gave them 50 percent of both Baltimore and Brooklyn. Hanlon became head of the Brooklyn office of this odd combine and switched Jennings, Kelley and Keeler to that team. He won the pennant with Brooklyn in 1899 (and again in 1900) while Baltimore, now managed by McGraw, sagged to fourth place. After that season the National League reduced its

John McGraw, shown at left as a young infielder in Olean, New York, and at right as manager of the Giants, was Orioles'

membership from 12 teams to eight, and Baltimore was one of the four cities dropped. The Old Orioles were all gone, the nova vanished.

In 1901 and 1902 the new American League put a team managed by McGraw in Baltimore, but it finished well down in the standings. In July 1902, McGraw abandoned it and jumped to the National League to begin his saga as manager of the New York Giants. At the end of that sad season the moribund Orioles franchise followed him to New York and became the American League entry there. Called the Highlanders at first, the team became somewhat better known later on as the New York Yankees.

Thus, the Old Orioles. They may not have been precisely what John McGraw said they were, but for five extraordinary years they were the dominant force in baseball, a team whose stars peaked together, their best years coming at the same time. It was a strange team, brought together by Hanlon's genius, fired up perhaps by McGraw's fury.

How good were they, really? Who knows? McGraw went to his grave insisting they were the best that ever was, but in 1927 Wilbert Robinson gave a different opinion. Interviewed during the World Series in which the Yankees of Babe Ruth and Lou Gehrig were crushing the Pittsburgh Pirates in four straight games, "Uncle Robbie" was asked how these Yankees would have fared against the Old Orioles. Robinson had had a bitter falling out with McGraw years earlier, and his reply to that question in 1927 did nothing to heal the breach.

"They would have beat our brains out."

spark plug. In center picture he is at top right. Clockwise from McGraw are teammates Jennings, Kelley and Keeler.

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Book reviews

Insect Magic
Kjell B. Sandved and Michael G. Emsley
(The Viking Press, $16.95)

This book is a song celebrating insects and the people who love them. It is highly recommended for readers who have never thought much about the most numerous and successful class of creatures, and even more so for those who shudder at the sight of a "bug."

The stunning photographs are by Kjell B. Sandved, no stranger to SMITHSONIAN readers. He and Michael G. Emsley, a biology professor at George Mason University in Fairfax, Virginia, who wrote the text, have collaborated in this magazine (December 1975) and on an earlier book, *Butterfly Magic.*

This is by no means a reference work or a field guide. Instead, its 83 color plates, many of them full page, take you into the insect world, sometimes face-to-outlandish-face, sometimes to watch predation. Extended captions are provided, so you learn not only the what and where of what you are looking at, but how it all fits into the larger scheme of things. (Sandved also offers some notes on the photography for anyone who may want to follow his extraordinary example.)

Emsley's text is low-key and even self-deprecating, but also very much to the point. Early on he notes that his appreciation of insects does nothing to prevent him from killing them for study, even though he would not kill a chimpanzee, an elephant or a dog. He cannot define the difference. "While it is sanctimoniously easy to support the 'right to life' of the larger animals," he says, "my devotion to insects' rights becomes instantly attenuated when a mosquito probes my arm."

In describing the social insects and how some ants even use tools, he is tempted to describe insects as "clever" or "intelligent" and to make comparisons between insect and human societies. "We must beware of endowing other animals with human attributes for such anthropomorphism is one of the cardinal sins . . . but, like some other sins, it is fun."

Emsley is nothing if not immersed in his subject. As a fielder for a cricket team in Nigeria, he spent his time fishing for tiger-beetle larvae in their tunnels. In Trinidad he allowed a maggot to grow under the skin of his arm until it was half an

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Collectors can go even further, becoming truly fanatical. Museums, Emsley tells us, keep lists of visitors who must be closely chaperoned at all times. In spite of such precautions, some collections have suffered substantial losses. But curators can often guess the identity of the thief by the specimens stolen, and so find themselves watching the obituary columns in the hope of making eventual recoveries.

One can travel the world with fancy nets, lights and suction traps to capture and study insects. But one can do nearly as well in the backyard or under a single rotten log. (Some collectors may be overdedicated: Emsley cites one paper entitled "Flies Associated with Dog Dung in an English City.") Even simpler, one can acquire the habit of always having a magnifying glass at hand.

But professional collectors, Emsley suggests, are often not adventuresome enough. They tend to follow "proven paths for fear of failure," he says, and thus "museums are full of insects from comparatively few tropical localities."

Emsley's own words best summarize the attractions of entomology—and this book: "It saddens me that so many people deny themselves the simple pleasure of appreciating the exquisite elegance of even the more common insects. It is not only the superb sculpturing of their cuticles but the extraordinary complexity of their lives that make insects such a fascinating source of enjoyment. It takes only a moment with a hand lens to discover a whole new world of design and beauty." A good point of view.

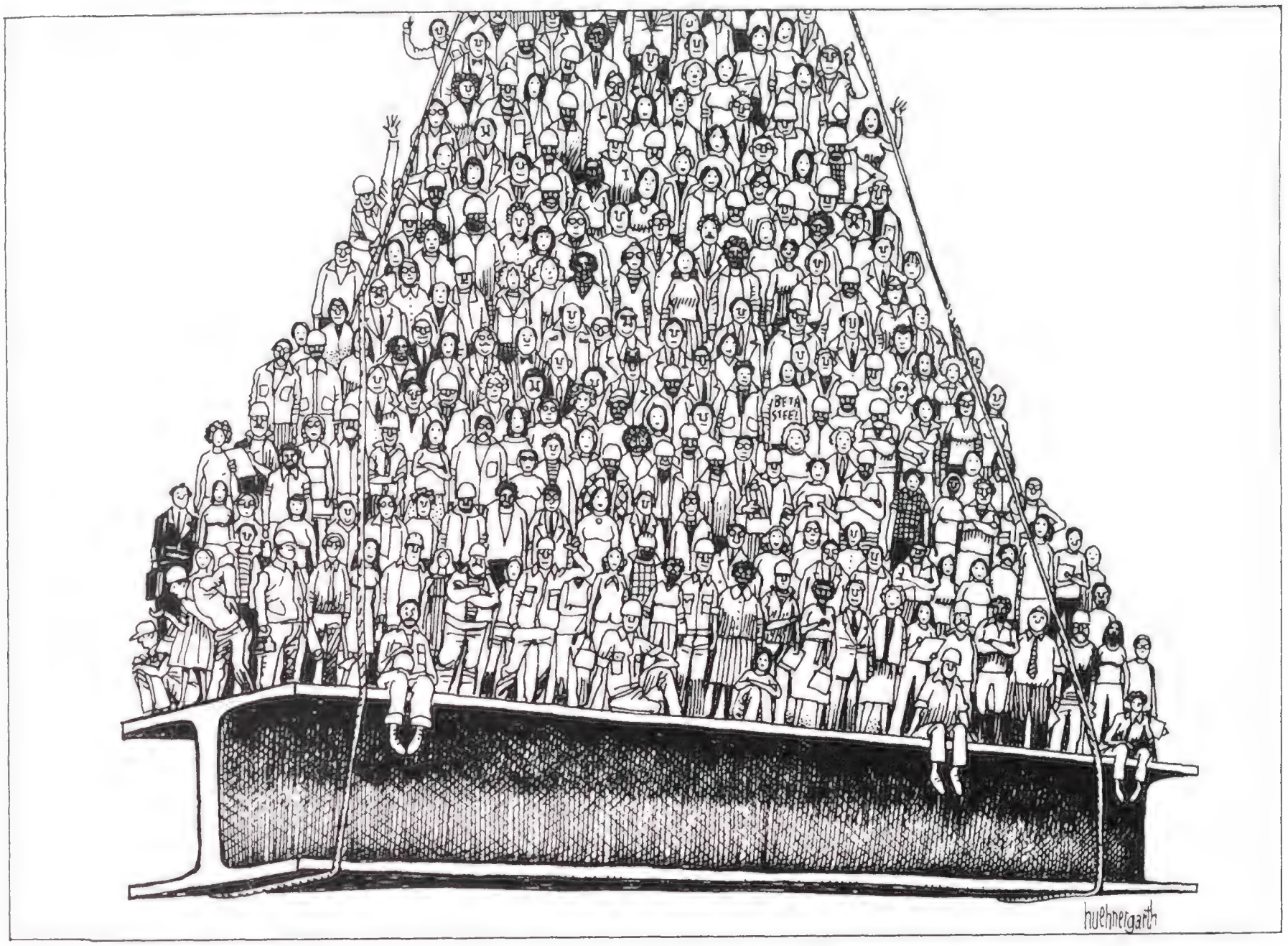
—John P. Wiley jr.
Board of Editors

Abbey's Road
Edward Abbey
(E. P. Dutton, $9.95)

The Edward Hoagland Reader
Edited with an introduction by
Geoffrey Wolff
(Random House, $12.95)

"Why so many [people] want to read about the world out-of-doors, when it's more interesting simply to go for a walk into the heart of it, I don't fully understand," writes Edward Abbey. "I suppose

Who provides good-paying jobs for 97,000 Americans?



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it is because the natural world, as we call it, has already become remote, out of reach, mysterious, in the minds of urban and suburban Americans." Abbey probably supposes quite correctly; how else to explain the growing popularity of such writers as Peter Matthiessen, John McPhee, and both Abbey and Edward Hoagland, whose personal encounters with the natural world fill the pages of these new essay collections.

There are striking similarities between Edward Abbey of Wolf Hole, Arizona, and Moab, Utah, and Edward Hoagland of New York City and Vermont. Both are well-educated, Eastern-born writers (Hoagland lives much of the year in a Manhattan highrise) who fell in love with the land at an early age and won't let go. For all their concern about America's deteriorating environment, both are fiercely but quietly optimistic: "In the city and in the country," writes Hoagland, "there is a simple, underlying basis to life which we forget almost daily: that life is good." Indeed, life is celebrated passionately in these collections. "I am a feeler, not a thinker, and proud of it," says Abbey. Like Hoagland, he is also an excellent stylist and observer, an individualist and outsider by turns happy, sad and outraged, who writes with startling honesty about things that matter.

In *Abbey's Road,* such things include life in an Arizona mining town, a walk through Utah's Canyonlands National Park, travels on the Rio Grande and a hike to the mountain logging town of Creel in Chihuahua, Mexico. Each of Abbey's sojourns is marked by discoveries. Off the Mexican coast, on the uninhabited Isla de la Sombra, he sheds his clothes (except for sandals and hat) and walks: "I enter a thick grove of wild palms. A dozen ladies in thick grass skirts, their green living fronds hang thirty feet above my head. Birds are poking about up in there. The loose stones clatter under my feet like broken glass. I walk through a funnel of solid rock, like the stem of a wineglass, like the passageway to birth, into the womb of the mountain."

In his beloved Southwest, the "wild tang" of skunk brings back memories of "October nights, raccoons and baying hounds, the big woods and foggy hills of Old Pennsylvania. That smell means Arizona, too: a border wolf, a desert bighorn, a mountain lion crouched on a

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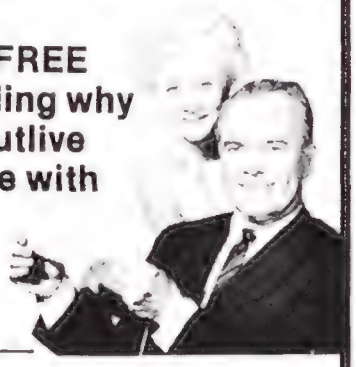

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ledge above the deer path in the chaparral. Good smells, good things, important, hard to find on Speedway Boulevard in Tucson or Central Avenue up in Phoenix."

Perhaps the most engaging of these essays are those set in Australia, where Abbey found environmental and social problems similar to those at home. In "The Reef," he writes angrily about the threat that tourism, pollution and mining pose for the Great Barrier Reef, an exquisite coral reef extending 1,250 miles, where Abbey encounters great green turtles. In other pieces, including one that tells of his madcap car ride across the Australian desert, he does a splendid job of evoking the Australian interior and the cattlemen, aborigines and townspeople who inhabit it.

His collection also offers several "polemics and sermons" on rampant technology, the right to bear arms, and other concerns of a self-styled libertarian and anarchist. Despite his occasional stridency, he invariably settles for common sense: "It is not a question merely of preserving forests and rivers, wildlife and wilderness, but also of keeping alive a certain way of human life, a wholesome and reasonable balance between industrialism and agrarianism, between cities and small towns, between private property and public property."

That is exactly the balance Edward Hoagland has struck in his own life, which leads him to celebrate the best of both urban and rural ways. A reader can only marvel at Hoagland's range and command of language. In *The Hoagland Reader,* culled from earlier collections, we have Hoagland on the circus, wolves, marriage, mountain lions, the literary life, dogs, boxing, tugboats, Vermont neighbors, fame, city street life and bears. Many of the essays are set on rivers and in the woods; like Abbey, Hoagland the observer admits "we don't entirely know why we are there" when visiting a place. "Rooting around on riverbanks and mountain slopes, we may be looking for that missing piece, or love, religion and the rest of it—whatever is missing in us—just as we so often are doing in the digging and rooting of sex."

Hoagland writes with uncanny precision. He finds mountain lions that "coo like pigeons, sob like women, emit a flat slight shriek, a popping bubbling growl, or mew, or yowl"; turtles that "cough,

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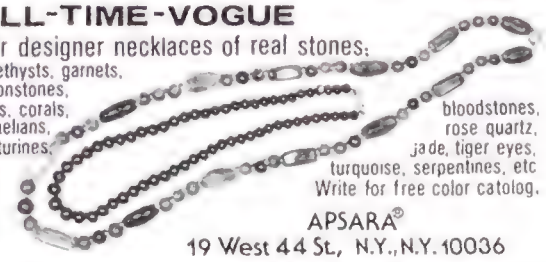

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I'm a farmer. And the story I tell you is the absolute truth, as incredible as it may seem.

It all started in a grove owned by Dr. Webb, our family doctor. One of the men who was picking fruit in the doctor's orchard came up to the Webb house holding six of the strangest grapefruit anyone had ever seen! A single branch of an ordinary grapefruit tree had produced these six unusual fruit.

These were big grapefruit, unusually big, And they had a faint red blush on their skin. When Dr. Webb sliced open the grapefruit, the fruit was a **brilliant ruby red** in color.

Doctor Webb decided to taste this strange new grapefruit. The fruit was perfect, juicy and luscious. It wasn't sour like other grapefruit either — it was naturally sweet without sugar.

For some reason, we'll never know why, nature had chosen to produce an entirely new kind of grapefruit here in our Magic Rio Grande Valley. It was incredible — men had labored for years to produce the ideal grapefruit, and had failed. But suddenly on a single branch of one tree in one grove, Mother Nature had done it all herself!

YOU CAN IMAGINE THE EXCITEMENT

From the fruit on that one branch, grove after grove now produces our own Texas Ruby Red Grapefruit. When I say, "not one man in a thousand has ever tasted this grapefruit." — you can easily understand why.

To begin with, Ruby Reds are rare. You can look for them in stores, but I doubt if you'll find one. You may find pink grapefruit, but seldom if ever do you see the genuine Ruby Reds.

So you start with the rarity of Ruby Reds, and to get to ROYAL Ruby Reds you have to get rarer yet. Only 4 to 5 percent of the entire crop will qualify as a "Royal Ruby Red."

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Why, we won't even consider harvesting a grove until I've checked out the fruit for tree-ripened maturity myself. I check for "natural sugar," low acid balance and high juice content. I check to see that the fruit is plump and meaty, and I even check to see that the skin is thin. Not only does each factor have to check out, but all the factors have to be in a proper relationship to each other before I'll harvest a grove.

And when we pick the fruit we're just as fussy. Every one of us takes a "picking ring" when we harvest. If the

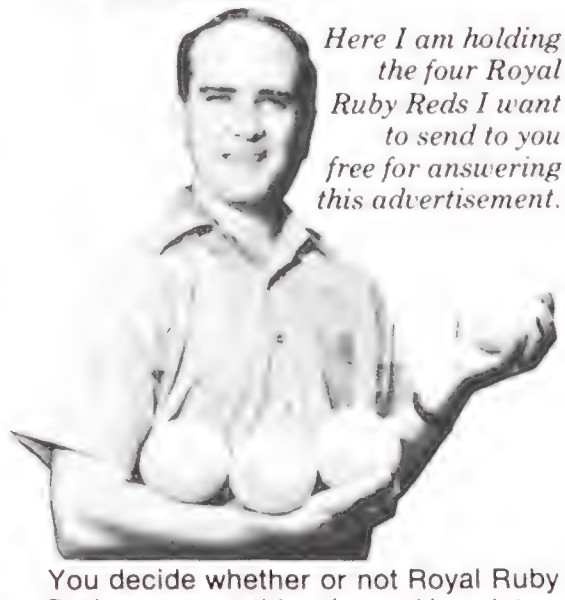
This is a picture of the actual harvest of this season's first Ruby Reds.

fruit is small enough to pass through this ring — we don't pick it! It simply isn't big enough to qualify as a Royal Ruby Red!

Even after picking there are other careful inspections each fruit must pass before I'll accept it. I size the fruit. And I grade it for beauty. Sometimes the fruit will be wind scarred. I won't accept it. Or sometimes it will have a bulge on the stem end that we call "sheep nose." I won't accept it. You can see I really mean it when I say I accept only **perfect** Royal Ruby Reds.

When I realized that the Royal Ruby Reds were the ultimate fruit, I decided to form a club and sell only to my club members. In this manner I can control my production to insure that nobody will be disappointed.

But before I ask you to join my club, I want you to sample my Royal Ruby Reds for yourself, at no cost to you whatsoever. Let me send you a box prepaid of 16 to 20 Royal Ruby Reds. Place four of them in your refrigerator until they are thoroughly cool. Then cut them in half and have your family sample this unusual fruit.



Here I am holding the four Royal Ruby Reds I want to send to you free for answering this advertisement.

You decide whether or not Royal Ruby Reds are everything I say. You determine whether or not eating a Royal Ruby Red is the fantastic taste experience I promise.

You decide. I'm confident that you and your family will want more of this superb fruit - and on a regular basis, too. If the four Royal Ruby Reds make you say "yes," then keep the remaining fruit. Otherwise return the unused fruit (at my expense) and you won't owe me a single penny.

But you are never going to know just how wonderful genuine Royal Ruby Reds are unless you place your order right quick.

This way you are sure to receive your package containing 16 or 20 Royal Ruby Reds for you and your family to sample a few days before Christmas. But since the supply is strictly limited it's important to place your order now.

SEND NO MONEY NOW

I'll put the bill for $11.98 for this first shipment on the top of the box. That's a saving of $5.00 off the regular price of $16.98 . All delivery charges are prepaid by me. Remit only after my Ruby Reds have proved themselves, otherwise you don't owe a thing.

Now suppose you do like Royal Ruby Reds — suppose you **love** them — can you be sure of getting more?

You surely can. By saying "yes" to my first shipment you have the privilege of automatically joining my Winter Fruit Club. Please be assured **you pay nothing in advance.** But each month during the winter I'll ship you a $16.98 pack of 16 to 20 orchard fresh, hand selected, hand picked Royal Ruby Reds.

Every Royal Ruby Red you receive will pass my tough tests. Each will weigh a pound or more. Safe delivery is guaranteed. This fruit is picked, packed and shipped each month, December through April.

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Call my toll-free number below, or send your name and address to me at the address below.

Remember it obligates you to nothing, except making a taste test of the best grapefruit that has ever been grown. And this taste test is on me!

Of course, as you can well imagine, when I say supplies are limited — I'm not kidding! There's just so many club members I can accept before I must close my membership this year.

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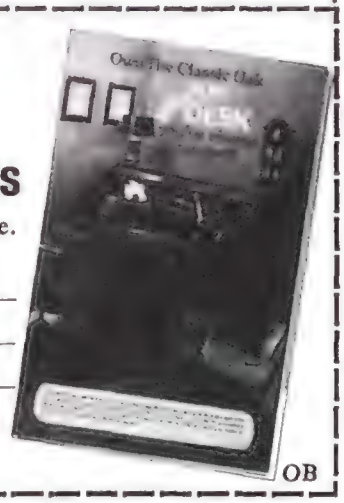

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burp, whistle, grunt and hiss, and produce social judgments"; and snakes that are "smooth movers, legalistic, unblinking. . . ." He is moving when discussing his stutter, his father's death, and how he became a writer, and hilarious when describing a 70-year-old man who enjoys diving 40 feet into 12 inches of water. One feels that Hoagland on anything—from ditchdigging to assembly-line work—would be interesting. His essays meander like intriguing rivers, filling a reader with anticipation at each turn. He also happens to be a master of the striking opening line:

"Ringling Bros. and Barnum & Bailey circus still tours America, and all the divorced mothers and fathers are glad because it gives them some place to take the kids."

"City people are more supple than country people, and the sanest city people, being more tested and more broadly based in the world of men, are the sanest people on earth. As to honesty, though, or good sense, no clear-cut distinction exists either way."

"Wolves have marvelous legs," he begins another essay, beckoning, drawing us into still another sharply observed piece in an extraordinary collection. He has been compared many times to Thoreau, but he is simply Edward Hoagland, and we should be grateful for it.

—Joseph Barbato
Instructor in English,
New York University

The Great Lover: The Public and Private Life of Herbert Tree
Madeleine Bingham
(Atheneum, $11.95)

Herbert Beerbohm Tree, whose life was as whimsical and unlikely as his name, is the subject of this new biography by Madeleine Bingham. Mrs. Bingham, who has written biographies of three other men of the theater—Sheridan, Vanbrugh and Henry Irving—makes clear her affection for Tree. He was, after all, one of the more interesting characters in a remarkably fertile and colorful scene. Carefully researched and written, with an admirable succinctness considering the breadth of Tree's life, Mrs. Bingham's biography is a panegyric without apology.

Born in 1852, into a period Charles Dickens referred to as "this summer-dawn

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of time," Tree's world was an Edwardian set piece, although his 65 years spanned three reigns. "If [Henry] Irving was the manifestation of the Victorian ethic of self-help, hard work and simple living," Bingham says, "Tree represented the expansiveness of rich sybaritic Edwardians."

As anyone who watched the BBC production *Lillie* knows, the modus operandi of that period seems to have been "Nothing, if not in excess." While the behavior of Oscar Wilde was more frowned at than followed, there was an atmosphere of admiration for the voluptuous. Tree captured this fascination and put it on the stage. "The Doric pillars of Greece, the sinister charm and cherry blossom of old Japan, the rich interiors of ducal Grosvenor Square, no setting was too rich to be plundered or displayed for the delectation of his Edwardian audience."

With a keen instinct for theatricality, publicity and the selective, if limited, intellectual interests of his audience, Tree set about to achieve his goal of actor-manager. His taste and intuition concurred precisely with a time when theater was becoming respectable and realistic. "Here a mirror was held up to life, and ladies and gentlemen behaved in a socially acceptable way in rooms with real fireplaces and real furniture, the age of the ragged painted cloth had set."

As Malvolio in *Twelfth Night*

With Constance Collier in *Macbeth*

Tree took very seriously indeed the business of making fantasy real. Largely self-taught, he was a keen observer of human psychology and was able to convey emotions effortlessly—or so it appeared. He was also blessed with a Herculean energy whose prodigiousness pervaded all aspects of his life. In one year, 1893, he produced six plays, among them Ibsen's *An Enemy of the People* and Wilde's *A Woman of No Importance*. The latter was a great success, with Tree playing the part

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A mesmerizing Svengali in *Trilby*

of Lord Illingworth. Wilde was pleased with Tree's enthusiasm for the role and said, "Ah, every day dear Herbert becomes *de plus en plus Oscarisé*—it is a wonderful case of Nature imitating art."

By the age of 44, Beerbohm Tree had produced and starred in *Trilby, Henry IV* (Part I), in which he played Falstaff, and countless drawing-room farces. He also opened his own theater—Her Majesty's—still a splendid reminder of his artistic and business acumen. In 1904, he started the Royal Academy of Dramatic Art, with his daughter among the first pupils. Now known as RADA throughout the theatrical world, it seems an ironic tribute to the man who maintained that acting was a "sacred fire" which could not be taught.

After some success with *Julius Caesar,* he began his Shakespearean festivals. Bingham writes admiringly that "perhaps he was one of the first of the actors to realise that the way to bring Shakespeare to life was to regard him as a writer trying to say something. . . . Tree treated him like a man—and a contemporary." His fervor and energy were unremitting; in a six-day period, he staged six plays and acted in all of them.

It was not his theatrical productions alone that were ambitious. By 1907, at the age of 55, Tree had "four natural sons, three legitimate daughters, a huge theatre to run, a period house in Chiswick, an extravagant wife and a second 'wife' comfortably installed on Putney Hill."

His fourth illegitimate child, Carol Reed, who had a distinguished dramatic career of his own, kept his parentage a secret until the day he died. His second family was not a secret to Tree's wife, however. "For some reason," she once remarked sharply, "there were a great number of children in *Hamlet.*"

His half-brother, Max Beerbohm, whose own life was certainly fuller than most, wrote affectionately about Herbert, who was his senior by some 20 years, " 'Big' is a word that attaches itself in my mind to so much concerning Herbert. His body was big and his nature big, and he did so love big things!"

His families grew, along with his fame and his riches. When he died in 1917, he left ten children by three women, the last born to an actress in the year of his death.

A journalist once wrote to Tree after seeing him perform, "The charm of your devotion to art is the frankness and happiness of its dedication." The same could be said of his life—and of this book.
—Jill Merrill
Washington writer and critic

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Harmless Drudges
Israel Shenker
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Over the past decade, Israel Shenker has added a curious sidebar to his career as a journalist. He covers dictionaries. And what a parade of dictionaries it is. At this moment, there are dictionaries aborning in modern Estonian and ancient Assyrian; others in progress include surveys of Hittite (written from 2000 to 1200 B.C.), Demotic (used in Egypt from 650 B.C. to A.D. 450), Oromo (a present-day Ethiopian dialect), Ladino (a Renaissance blend of Hebrew, Arabic and Catalan still used in Eastern Europe) and Middle English (the language of Chaucer). There is even a multilingual *Insult Dictionary* (the language of waiters and freeway drivers). Also planned are two dictionaries that will detail the internal tensions displayed in that most volatile of tongues, our own —as it is bandied about by American v. English speakers.

Time and again, Shenker uses his dictionary work to let us in on the secrets of the past—for instance, that there was once thought to be a race of one-legged desert dwellers in North Africa who slept on their backs under the shade of their tremendous feet. Or that there is today a "race" of British teen-agers who constantly listen to tiny transistor radios, which they refer to as *trannies*.

The diction of politics presents a special challenge to lexicographers. Thus, politicos and their wordsmiths who refer to *thumbsuckers* are not necessarily into family counseling; they are merely discussing analytical stories or "think pieces." The *Great Society Dictionary*, a late 1960s descendant of Ambrose Bierce's *Devil's Dictionary*, deals more harshly with the language of politics and confrontation. There, the speechifiers' catchphrase, *a century of peace*, is rightly exposed for what it is as "hundred-proof moonshine."

Leo Rosten's Yiddish dictionary will likewise let you in on secrets. For one, that a *schlemiel* is a man who "buys a suit with two pairs of pants and promptly burns a hole in the jacket." But Rosten was not the first to inject some levity into his dictionary. Humor has a lengthy pedigree on such pages. Samuel Johnson, author of the first great English dictionary, parodied all lexicographers, including

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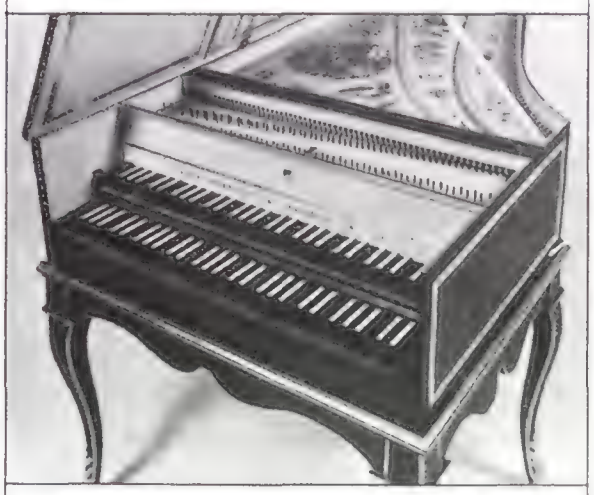

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himself, with his definition of *network:* 'Anything reticulated or decussated, at equal distances, with interstices between the intersections." And he showed his widely quoted disdain for things Scottish with his definition of *oats:* "A grain, which in England is generally given to horses, but in Scotland supports the people." (And yet he much enjoyed visiting the country and its people.)

When Shenker covers the dictionary world, it also means he covers the people who make dictionaries, the "harmless drudges" that Dr. Johnson—in an unaccustomed fit of self-effacement—blurted out on his pages. For the most part, such people are the meticulous scholars who arrange their materials on kitchen tables (using rubber bands and shoe boxes), do their own typing and wouldn't dream of allowing a computer near their work.

That is exactly the case at the *Oxford English Dictionary* (OED), a long-running production—nearly a century now—that is a basic tool for linguists and literary sleuths the world over. The OED's special feature is that it prints quotations showing the first time each word appeared in English and illustrating its various usages. New quotations are added to the often-lengthy entries every time the word garners a new shade of meaning. This is particularly troubling for today's expanding language, which the present OED staff has been compiling since 1957. Some two million word-citation slips are now filed away in the OED offices.

With all those slips around, in all those word-wise *ateliers,* the wonder is that so few slipups occur. Thus, the Merriam-Webster second edition of 1934 defined *lord* as "density," but no such word exists. It began life as a card in an abbreviation file that read "D or d," meaning that one or the other regularly denoted density. Says Shenker: "A deletion was ordered in 1940, but in successor dictionaries the ghost went right on walking, too hardy to dispatch."

Then there is the case of the French-English dictionary in which the first edition omitted the accent from the name of the Corsican corporal, Napoléon. But, Shenker notes, "the second printing restored the orthographic distinction, proving that you can lead a *corse* to Waterloo, but you can't make him shrink."

—*Michael Olmert*
Annapolis writer and critic

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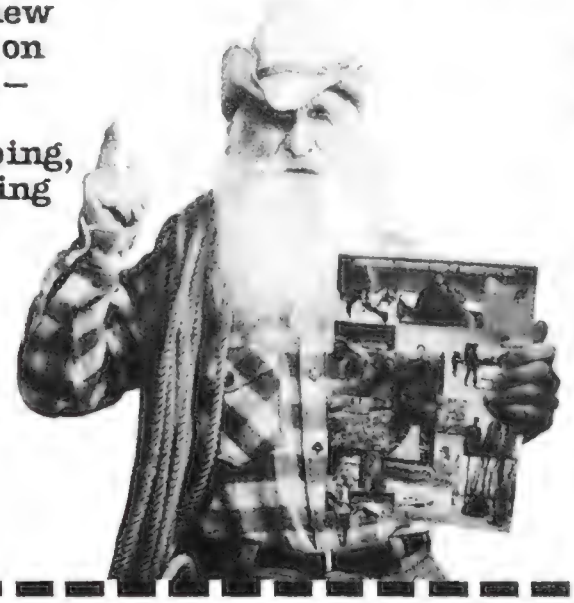

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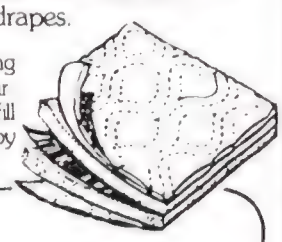

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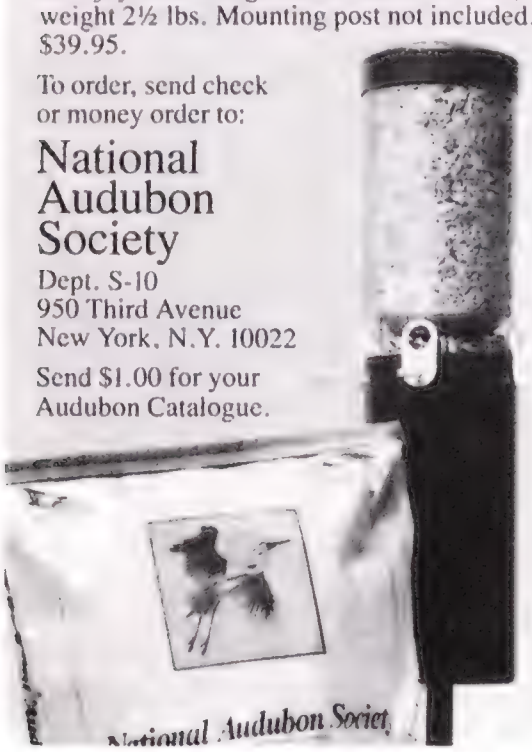

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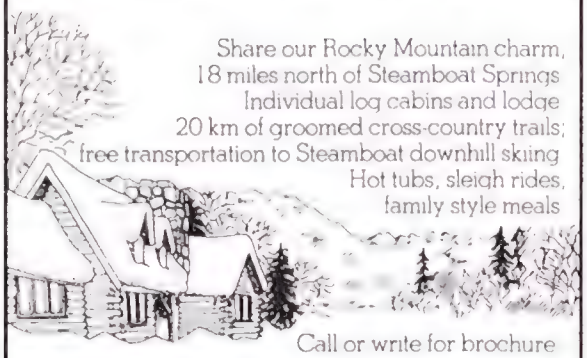

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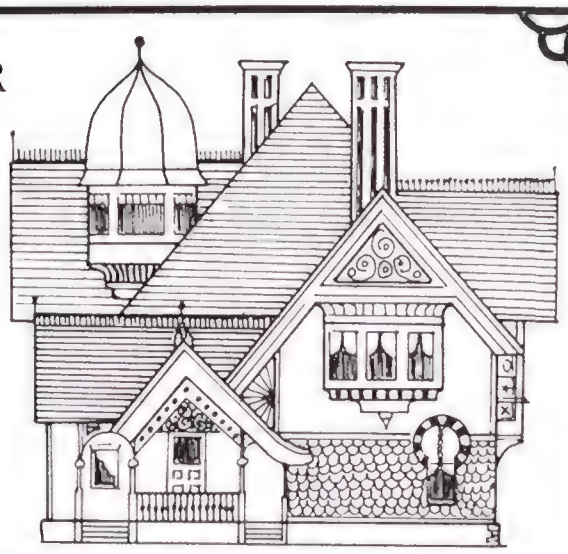

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Additional reading

Depression art (p. 44)

The New Deal for Artists by Richard D. McKinzie, Princeton University Press, 1973

America as Art by Joshua C. Taylor, Smithsonian Institution Press, 1976

Art for the Millions, edited by Francis V. O'Connor, New York Graphic Society, 1973

Only Yesterday: An Informal History of the 1920s by Frederick Lewis Allen, Harper & Row, 1964

Age of the Great Depression, 1929-1941 by Dixon Wecter, Macmillan, 1948

Penguins (p. 56)

Birds of the Antarctic and Sub-Antarctic by George E. Watson, American Geophysical Union (Washington, D.C.), 1975

Penguins: Past and Present, Here and There by George Gaylord Simpson, Yale University Press, 1976

Penguins by Bernard Stonehouse, Golden Press, 1968

Penguin Summer by Eleanor Rice Pettingill, Clarkson Potter, 1960

Another Penguin Summer by Olin Sewall Pettingill, Scribners, 1975

The Biology of Penguins, edited by Bernard Stonehouse, Macmillan, 1975

Edward Wilson's Birds of the Antarctic, edited by Brian Roberts, Blandford Press (London), 1967

Penguins by John Sparks and Tony Soper, Newton, Abbot, David and Charles (England), 1967

Oil spills (p. 68)

Oil Spills and the Marine Environment by Donald F. Boesch et al., Ballinger

(Cambridge, Massachusetts), 1974
Disaster by Oil by Jeffrey Potter, Macmillan, 1973
Hard Aground by Ron Winslow, Norton, 1978
Marine Pollution, edited by R. Johnston, Academic Press (London), 1976

Baroque Vienna (p. 76)
Vienna by Ilsa Barea, Knopf, 1966
Vienna, My Vienna by Joseph Wechsberg, Macmillan, 1968
The Waltz Emperors by Joseph Wechsberg, Putnam, 1973
Prince Eugen of Savoy by Nicholas Henderson, Praeger, 1964
Leopold I of Austria by John P. Spielman, Thames and Hudson (London), 1977
J. B. Fischer von Erlach by Hans Aurenhammer, Allen Lane (London), 1973
History of the Popes by Leopold von Ranke, 3 vols., reprinted by Ungar (New York), 1966
The German Popular Play by Mary Beare, Cambridge at the University Press (England), 1938

Hard math (p. 90)
"Mathematics and Computer Science: Coping with Finiteness" by D. E. Knuth, *Science,* December 17, 1976
The Codebreakers by David Kahn, Macmillan, 1967
"Cryptography in the Flectronics Age" by Martin Hellman, *The Stanford Engineer,* Fall/Winter 1978
"The Growing Threat to Computer Security," *Business Week,* August 1, 1977
"Cryptology: Scientists Puzzle Over Threat to Open Research, Publication" by Deborah Shapley and Gina Bari Kolata, *Science,* September 30, 1977
The Design and Analysis of Computer Algorithms by A. V. Aho, J. E. Hopcroft and J. D. Ullman, Addison-Wesley (Reading, Massachusetts), 1974

John Singer Sargent (p. 100)
John Singer Sargent and the Edwardian Age by James Lomax and Richard Ormond (catalog of exhibition), Leeds Art Galleries, National Portrait Gallery (London) and Detroit Institute of Arts, 1979
John Singer Sargent: Paintings, Drawings, Watercolours by Richard Or-

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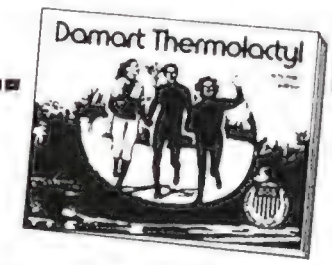

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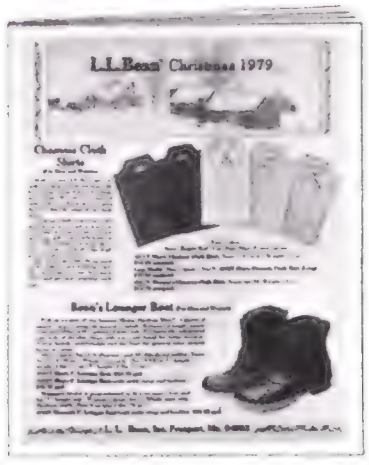

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mond, Phaidon (London), 1970
John Singer Sargent, A Biography by Charles Merrill Mount, Norton, 1955
The Private World of John Singer Sargent by Donelson F. Hoopes, Corcoran Gallery of Art (Washington, D.C.), 1964
Sargent's Boston by David McKibbin, Museum of Fine Arts, Boston, 1956

Greenhouses (p. 110)
The Glass House by John Hix, MIT Press, 1974
The Covered Garden by Kenneth Lemmon, Dufour (Philadelphia), 1963
Greenhouse Gardening by James Underwood Crockett and the Editors of Time-Life Books, 1977
Royal Botanic Gardens, Kew by W. B. Turrill, Herbert Jenkins (London), 1959
The Architecture of the Well-Tempered Environment by P. Reyner Banham, Architectural Press (London), University of Chicago, 1969
The Crystal Palace, 1851-1936 by Patrick Beaver, Hugh Evelyn Ltd. (London), 1976
The Works of Sir Joseph Paxton, 1803-1865 by George F. Chadwick, Architectural Press, 1961

Snake charmers (p. 120)
Venomous Reptiles by S. A. Minton jr. and M. R. Minton, Scribners, 1969
Snake Lore by John Crompton, Doubleday, 1964
Men and Snakes by Ramona and Desmond Morris, McGraw-Hill, 1965
Snakes in Fact and Fiction by James A. Oliver, Macmillan, 1958

Dibner Library (p. 128)
Heralds of Science, selected and annotated by Bern Dibner, MIT Press, 1969
The Unknown Leonardo, edited by Ladislao Reti, McGraw-Hill, 1974
Alessandro Volta and the Electric Battery by Bern Dibner, Franklin Watts (New York), 1964
Ten Founding Fathers of the Electrical Science by Bern Dibner, Burndy Library (Norwalk, Connecticut), 1954
Moving the Obelisks by Bern Dibner, Burndy Library, 1950

Lady equestrians (p. 136)
The Saddle of Queens by Lida Fleitmann Bloodgood, J. A. Allen (Lon-

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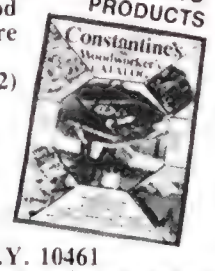

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Neon signs (p. 150)
The Russians by Hedrick Smith, Quadrangle (New York), 1976
Russia: the People and the Power by Robert G. Kaiser, Atheneum, 1976
Neon by Joe Goldberg, Dell, 1977
American Neon by K. Mack, Universe Books (New York), 1976

The Old Orioles (p. 155)
The Baseball Encyclopedia, Macmillan, 1979
The Home Team—The Baltimore Orioles by James H. Bready, Baltimore Baseball Club, Inc., 1979
Baseball: The Early Years by Harold Seymour, Oxford University Press (New York), 1960
The National League Story by Lee Allen, Hill & Wang (New York), 1961
The Days of Mr. McGraw by Joseph Durso, Prentice-Hall, 1969

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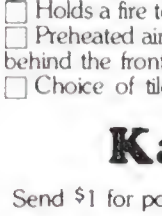

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Smithsonian highlights

Welcome to the Museum of African Art. This unique museum, which recently became part of the Smithsonian (p. 34), is a complex of nine town houses at 316-332 A Street, N.E., including the first Washington residence of abolitionist Frederick Douglass. Founded in 1964, the museum contains more than 8,000 works—sculptures, textiles, paintings and musical instruments—as well as films, archival materials and thousands of photographs.

In announcing the new association, Smithsonian Secretary S. Dillon Ripley said, "From the Smithsonian's viewpoint, the Museum of African Art fills a serious gap in the Institution's coverage of the world's major artistic traditions and contributions. The museum also offers great potential as a study center for those specializing in the creative contributions of Africa to world culture."

Another bright addition to the Smithsonian is the Red Room, an expansion of the popular First Ladies Hall at the Museum of History and Technology. This 15-by-20-foot display area is based on the Red Room of the White House as it looked during the John F. Kennedy administration, when it was redecorated as an Empire parlor of the 1810-1830 period (below). The walls are covered with gold-bordered red silk; furnishings are on loan from the White House and from the museum's collections.

But what makes this room different from its earlier years is the company it keeps: posing amidst the antiques are First Ladies Jacqueline Kennedy, Lady Bird Johnson, Patricia Nixon, Betty Ford and Rosalynn Carter, mannequins of course, which were recently shifted over from their very crowded display case.

Special October exhibits and events

Air & Space Museum
Forty Years of Jet Aviation (October 26, 9 A.M.-4 P.M.)—Free public symposium in the museum's theater with lectures by some foremost pioneers of jet aviation.

Red Room: model for new display area for First Ladies at MHT

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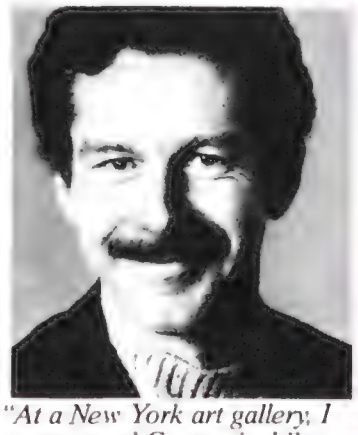

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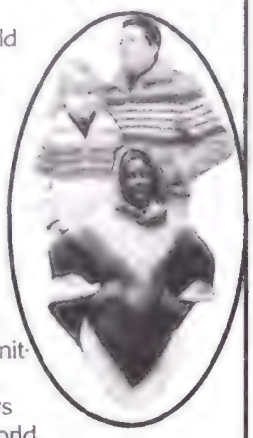

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Our Beautiful Earth: The View from Air and Space (through fall 1980)—Exhibition of photographs by aerial photographers, NASA astronauts and the unmanned satellite Landsat (SMITHSONIAN, April 1979).

The Aerial Artist Photographer (October 3, 8 P.M.)—Lecture by William Garnett, aerial photographer, professor of design at the University of California, Berkeley.

Earth from Space through Rose-Colored Glasses (October 17, 8 P.M.)—Robert S. Cooper, former director of the Goddard Space Flight Center, presents an illustrated lecture on the Landsat satellites which silently scan and photograph the Earth from 570 miles away.

A Portrait of the Sun: From Stonehenge to Skylab (October 24, 8 P.M.)—Lecture by Von Del Chamberlain of NASM, first of the 1979 NASM Lecture series, "Sun: Star of Life."

The Sun as an Astrophysical Observatory (October 30, 8 P.M.)—Lecture by Dr. Jack B. Zirker, director of the Sacramento Peak Observatory.

How Far Can You See? (October 6, 9 A.M.)—Free monthly sky lecture, Albert Einstein Spacearium.

Free Film Series (Thursdays, 7:30 P.M.)

Arts & Industries Building

1876: A Centennial Exhibition—This popular exhibit now includes periodic performances on a 19th-century piano.

Freer Gallery of Art

Chinese Paintings from the Ch'ing Dynasty [1644-1912] (through October 15).

Gods, Lovers and Other Heroes: Themes in Rajput Painting of India (October 9, 8:30 P.M.)—Lecture by Vishakha Desai, Boston Museum of Fine Arts.

Gorky's *Portrait of Akabi*

Hirshhorn Museum & Sculpture Garden
Arshile Gorky: The HM&SG Collection (October 4-November 25)—First public showing of museum's collection of 26 paintings, three drawings by this seminal figure in development of Abstract Expressionism (above).

Murals Without Walls: Arshile Gorky's Aviation Murals Rediscovered (October 4-November 25)—Two murals created in 1936-37 for the Newark Airport, related paintings and documentary materials.

National Collection of Fine Arts
After the Crash (October 24-January 13); *Prints for the People* (through December 2)—Depression art (pp. 44-53).

Sculpture and the Federal Triangle (October 26-January 6)—Drawings, models and photographs of architectural sculpture in the 1930s focusing on seven buildings in Washington, D.C.

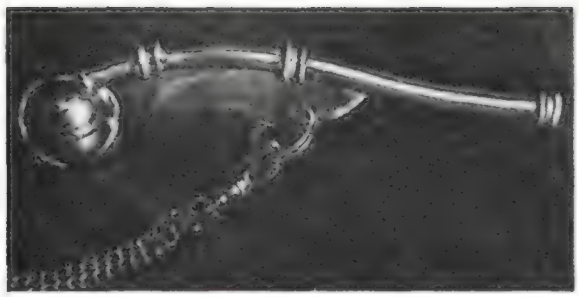
NCFA Traveling Exhibitions
Seymour Lipton: Aspects of Sculpture (October 23-January 20)—The Jewish Museum, New York City.

Chicago Currents: Koffler Foundation Collection (October 15-November 15)—Arts Center, Virginia Beach, Virginia.

Cooper-Hewitt Museum (New York)
Selections from the Smithsonian (through January 6)—Exhibition of objects chosen from the Smithsonian collections of more than 70 million items, illustrating various design themes.

The Cooper-Hewitt Collections: Glass (through November 25).

Poetry and Prose Readings (October 14, 21, 28, 3 P.M.)—Free tickets available in advance from museum.



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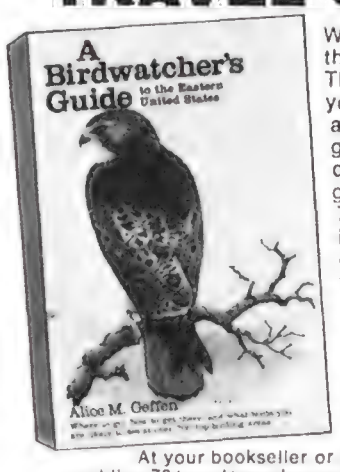

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National Portrait Gallery
The Big Crash (October 24-March 30)—The story of the stock market collapse (pp. 44-53).
Portraits in Motion Series—Actress Eugenia Rawls portrays Tallulah Bankhead, October 13 at 1 and 2:30 P.M.; Actress-scholar Chris Prouty gives dramatic interpretations in several galleries, October 27, 1-3 P.M.

Museum of African Art
Selections from the Museum of African Art Collections—This newest member of the Smithsonian "family" will exhibit some 400 of its best works.
Crafts Workshops for Children (weekdays); for information, (202) 547-6222.

Museum of History & Technology (MHT)
Afro-American Traditions in the Decorative Arts (October 18-December 30)—Crafts dating from 1860 reflect adapting of traditional designs to black and white American society.
The Red Room—Expansion of First Ladies Hall represents this White House room as it looked during Kennedy administration (p. 186).

Museum of Natural History (MNH)
The Eskimo Narrative (October 1-December 31)—Contemporary Inuit art, Learning Center Gallery.
William H. Holmes' Geologic Art, 1872-1882 (through November 11).

Renwick Gallery
Irena Brynner: Jewelry since 1953 (ends January 13).
Art of Russia, 1800-1850 (through November 12)—SMITHSONIAN, August 1979.

Renwick Traveling Exhibition
The Harmonious Craft: American Musical Instruments (October 5-December 30)—The American Craft Museum, New York City.

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Dick Myers Puppet Theatre (Wednesdays and Fridays, 10 A.M., 11:30 A.M.; Saturdays, Sundays, 11:30 A.M., 2 P.M.)—Discovery Theater, Arts & Industries.
The Dixie Hummingbirds (October 14, 3 P.M.)—Baird.
American Women Composers (October 15 and 29, 9 P.M.)—One-hour concerts, HM&SG, free.
20th-Century Consort (October 21, 7 P.M.)—Concert, HM&SG.
Cantilena Chamber Players (October 22, 8 P.M.)—HM&SG.
Mikhail Glinka and Beyond (October 21, 3 P.M.)—Free concert of Russian popular song, Renwick.

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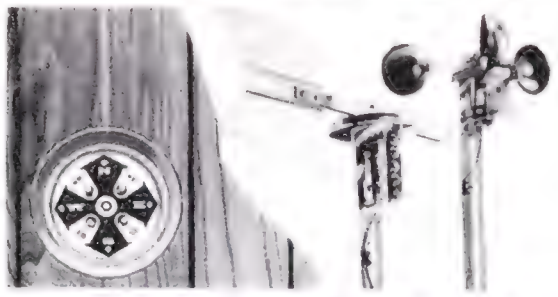

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American Musical Theater: 1900-1920 (October 5, 6, 7; 8 P.M.)—Song and dance, Baird.
Mel Lewis and the Jazz Orchestra (October 27, 28; 6 P.M.)—Baird.
Smithsonian Chamber Players (October 28, 8 P.M.)—Guest violinist Jaap Schröder, 18-century instruments, MHT's Hall of Musical Instruments; (October 29, 8 P.M.) —Guest, Jaap Schröder, Baird.

Thirteenth Annual Festival of American Folklife

A Caribbean festival complete with Vietnamese food, of all things, will reverberate on the grounds of the Washington Monument from October 3-8 for the 13th annual Festival of American Folklife—testimony to America's multicultural traditions. (Events will be cancelled during Pope John Paul II's visit to the Mall October 7.)

The festival, with its colorful street-fair atmosphere, includes calypso singers, brass and steel bands, a parade and crafts demonstrations by Americans of Caribbean descent; new Vietnamese residents from the Washington, D.C., area will demonstrate lantern-making, painting on silk and food preparation. Caribbean and Vietnamese food will be sold.

Also planned is a re-creation of a patent medicine show that will bring together pitchmen, folk musicians and dancers who traveled with such shows in the 1930s and '40s. Groups of Native Americans will show how they build traditional houses to incorporate efficient energy systems. And the "folklore in your community area" introduces taxi drivers, local firefighters, Mom-and-Pop store owners, stone carvers and CB radio operators.

P.S. It's free.

Smithsonian events (tickets required; 202-381-5157)

MNH's Baird Auditorium

Future Power: Realities and Myths of the Energy Crisis (Tuesdays, 7:30 P.M.)—Seven information-packed programs, free, beginning October 2 at Departmental Auditorium, Constitution Avenue between 12th and 14th Streets (across from MNH). Remaining lectures at Baird Auditorium.
Eskimo Whaling in Alaska: A Question of Survival (October 2, 8 P.M)—Curator of Ethnology at the New Bedford Whaling Museum Dr. John Bockstoce presents an illustrated talk on the hunt and its implications for the Eskimos, the United States and the whales.
Canterbury Cathedral (October 10, 8 P.M.)—A slide-illustrated lecture by Kath-

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leen Brooks, author and official cathedral guide, tracing the history of the majestic edifice from A.D. 597.

Art of the Pacific Islands (October 11, 8 P.M.)—Douglas Newton, chairman of primitive art at the Metropolitan Museum of Art, examines recent archaeological research and art of Polynesia, Micronesia, Melanesia and New Guinea.

Pathways to the Gods (October 18, 8 P.M.)—Astronomer Gerald Hawkins discusses puzzling and fast-disappearing giant drawings found in remote deserts of Peru and linked to pre-Incan culture.

Alfred Kazin at the Smithsonian (October 31, 8 P.M.)—Special lecture by this distinguished historian and critic on the literary and political life of 19th-century Washington.

From Stone Age Back to Stone Age: The Search for Energy and Materials (October 20, 9:30 A.M.-5:15 P.M., Ecology Theater, MNH)—Dr. Theodore A. Wertime, historian, covers such subjects as the earliest fire users, deforestation, firewood, iron and other technological revolutions, computers and "tomorrow's electronic cave."

MHT's Carmichael Auditorium

The Afro-American Tradition in Decorative Arts (October 18, 8 P.M.)—John Vlach, University of Texas at Austin, surveys art forms reflecting four centuries of cultural exchange between blacks and whites in America.

An Afternoon of Staffordshire Pottery (October 19, 2:30 P.M.)—Robert Copeland, collector and historian, traces the development of pottery—Watt, Wedgwood, Spode, Brindley and others.

HM&SG Auditorium

Arshile Gorky: The First Abstract Expressionist (October 13, 10 A.M.-5:30 P.M.)—Four eminent Gorky scholars examine the artist's work and its relation to his short and tragic life.

Radio Smithsonian

This music-and-conversation program is broadcast weekly on approximately 50 stations across the country. For times, consult your local fine arts radio station:

The MMT Story (week of October 7)—A visit to Mt. Hopkins, Arizona, where the revolutionary Multiple Mirror Telescope recently began operation (SMITHSONIAN, May 1979).

Whoopee! (week of October 14)—Highlights of the 1928 Ziegfeld hit starring Eddie Cantor, from a new Smithsonian album. Host is Martin Williams, director of the Smithsonian Jazz and American Culture Program.

The Harmonious Craft (week of October 21)—A sampling of beautifully hand-

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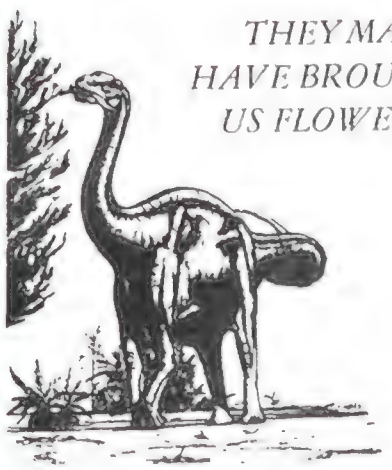

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Allan J. Lichtman and Joan R. Challinor, Editors

Practical ways of reconstructing personal family history and key issues in family studies are explored in this book, a collection of essays and two workshop transcripts from the Smithsonian Institution's Sixth International Symposium. Both scholars of family life and those interested in their own family heritage will find guidance on how to obtain and interpret information about family history from oral recollections, family photographs and documents such as diaries, wills, deeds and census entries.
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Astronaut Edwin E. Aldrin, Jr.

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To commemorate the tenth anniversary of the first landing on the moon, the Smithsonian Institution's National Air and Space Museum has developed this unusual combination of essays, photographs, and collateral material which attempt to put the Apollo program in a historical perspective from the vantage point of a decade later.
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Phoenix (through October 14)—*Year of the Hopi,* The Heard Museum.

Salinas, California (through October 28)—*America's Architectural Heritage,* Hartnell College Gallery.

Fort Lauderdale (October 6-November 4)—*Inuit Sculpture* (Eskimo), Fort Lauderdale Museum of the Arts.

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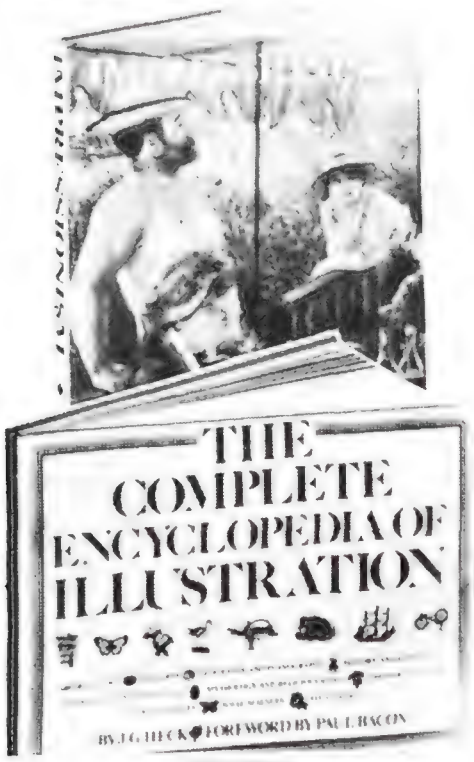

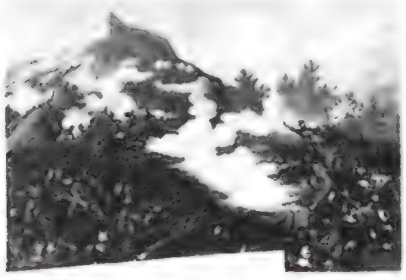
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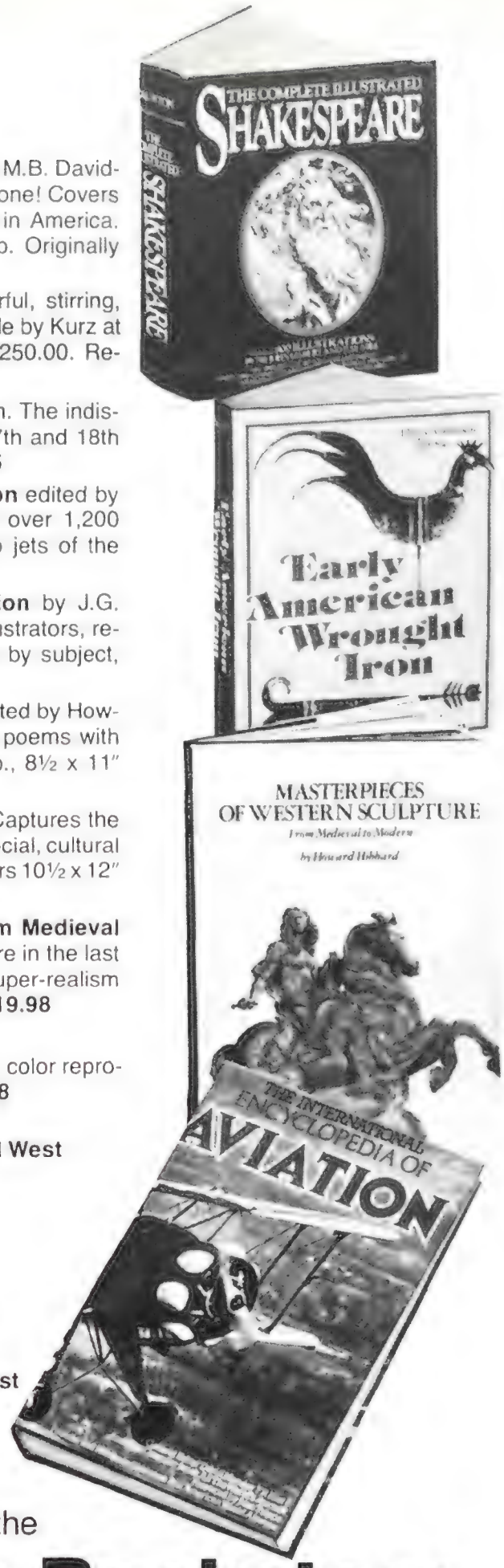
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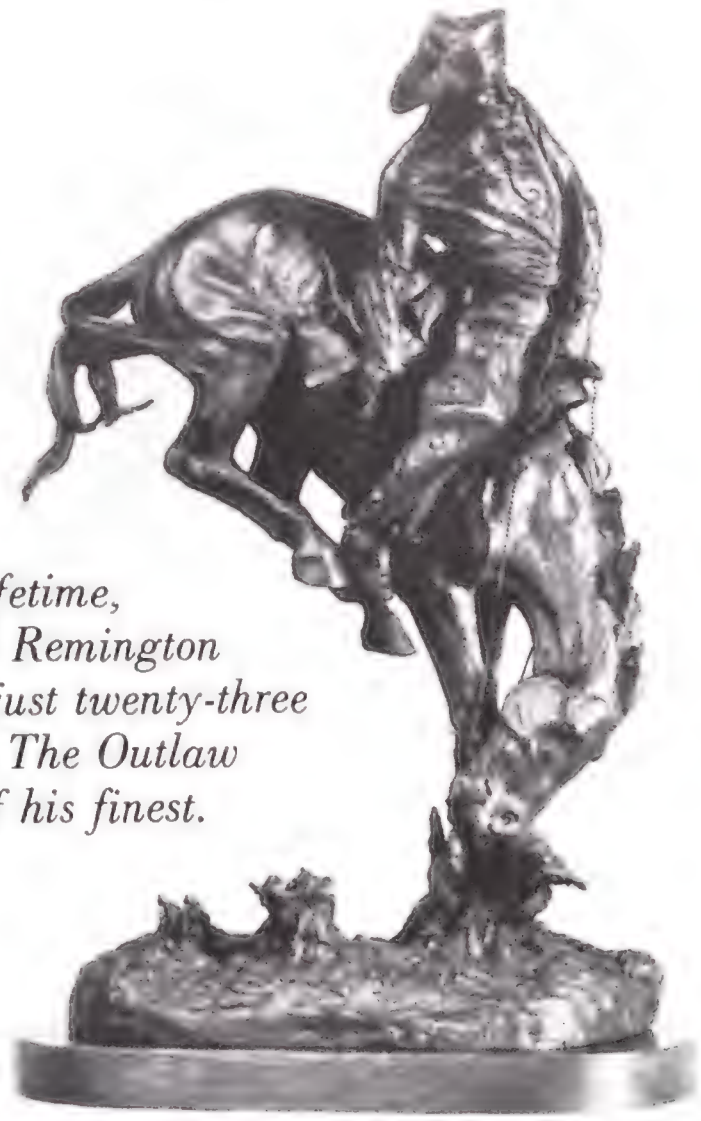

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This limited edition replica is the second in a group of Remington bronzes specially commissioned by Museum Collections Inc., and issued in cooperation with the Buffalo Bill Historical Center, Cody, Wyoming.

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Guaranteed re-purchase agreement: Museum Collections Inc. will willingly re-purchase your numbered bronze of *The Outlaw* anytime within one year of your date of purchase. Thus, your investment in this bronze is fully protected.

Each sculpture in the new edition is foundry cast bronze. This copyrighted edition is being cast under the auspices of Museum Collections Inc., using the lost wax process and patination that was used for Remington's original bronzes — height, with American walnut base, 17¼"

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FOR COMPLETE DETAILS OF PURCHASE:

Phone toll-free 1-800-243-4492, or write: Mr. Richard Walker, President, Museum Collections Inc., Dept. W11, Box 7000, Greenwich, Conn. 06830, for illustrated brochure.

Issue price, $1,250. You may reserve the next available numbered bronze immediately by sending us your check now. Major credit cards honored. A five-month payment plan may be arranged. We urge you to take prompt action.

Athens, Georgia (October 13-November 18)—*Charles Burchfield: The Charles Rand Penney Collection,* University of Georgia Art Museum.

Columbus, Georgia (through November 10)—*20th-Century Sculptors and Their Drawings: Selections From the HM & SG,* Columbus Museum of Arts and Sciences.

Ames, Iowa (through November 4)—*The Oil Sketches by Frederic E. Church,* Iowa State University, Brunnier Gallery.

Logan, Kansas (October 13-November 11)—*Exhibition Flight,* Dane G. Hansen Memorial Museum.

Springfield, Massachusetts (through November 11)—*Louis M. Eilshemius: Selections from HM & SG,* Museum of Fine Arts (SMITHSONIAN, November 1978).

Worcester, Massachusetts (October 6-November 4)—*Shaker Built,* George C. Gordon Library.

Omaha (October 6-November 4)—*Images of Old Age in America,* University of Nebraska.

Omaha (through October 28)—*The Phillips Collection in the Making: 1920-1930,* Joslyn Art Museum.

Rochester, New York (October 20-November 18)—*The Great West, Real/Ideal,* Lincoln First Bank.

Chapel Hill, North Carolina (October 6-November 4)—*Cut on Wood, the Art of American Wood Engraving, 1780-1900,* University of North Carolina.

Houston (through October 28)—*Crosscurrents: Neoclassical Drawings and Prints From the Cooper-Hewitt Museum,* Rice Museum.

Tacoma (through October 28)—*Visionary Drawings: Architecture and Planning,* Tacoma Art Museum.

Decatur, Illinois (October 6-November 4)—*African Artists in America,* Kirkland Gallery, Millikin University.

Glencoe, Illinois (through October 28)—*The Tallgrass Prairie: An American Landscape,* Chicago Horticulture Society Botanic Garden.

Port Huron, Michigan (through October 21)—*Edison and the Electrical Age: 100 Years,* Museum of Arts and History.

Northfield, Minnesota (through October 21)—*Benny Motzfeldt: Norwegian Glass Pioneer,* St. Olaf's College.

Jefferson City, Missouri (October 13-November 11)—*The Inaugural Story, from George Washington to Gerald Ford,* Central Motor Bank.

Kansas City, Missouri (through October 28)—*Daum: 100 Years of Glass and Crystal,* William Rockhill Nelson Gallery.

Cheyenne (through February 24)—*And Now a Message . . . A Century of American Advertising, 1830-1930,* Laramie County Library.

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New Zealand—November 21-December 7 or February 20-March 7: Tour includes talks on natural history, the Maori heritage, parliament and home visit. (Tour originates and ends in Los Angeles.)

Winter Russia*—December 28-January 11: Leningrad, Tallinn and Moscow plus optional two-day excursion to Vladimir and Suzdal; activities include gala New Year's Eve party, troika ride, visits to schools, factories, theater, circus.

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Ecuador and the Galápagos Islands—April 18-May 1: Visit Quito, then travel by train to Guayaquil to board the *Buccaneer* for a seven-day voyage through the famous Galápagos Islands. Participate in shipboard study seminars; meet with scientists at the Charles Darwin Research Station; observe the rich plant, bird and animal life.

Springtime in Greece*—May 4-20: A program in Athens and a cruise to Hydra and Aegina are followed by visits to the renowned sites of ancient civilizations when the countryside is a paradise of wild flowers. A mainland tour to the Peloponnesos, Epirus, Thessaly, the Pelion peninsula and the awe-inspiring country around Delphi through rugged mountains and the amazingly rich array of wild flora.

London*—May 25-June 8: A full program in London with special lectures, walking tours, theater and excursions. A five-day travel seminar into the English countryside offers a selection of areas to be visited.

Isles of Britain—May 30-June 15: From London and Southampton, circumnavigate Great Britain, with visits to Dublin, Conway in North Wales, Edinburgh and Dover. The cruise also includes fascinating lesser-known destinations in the Isles of Scilly, the Inner and Outer Hebrides, the Shetlands and the Orkney Islands.

The Wild Highlands of Scotland—May 29-June 14: In cooperation with the Aigas Field Centre, based in a Victorian castle, explore the magical scenery of the central Highland glens. Evening lectures provide a foundation for special hikes and field study of the wildlife and natural history.

*Indicates optional predeparture course.

For specific trip brochures, write: Associates Travel, A&I 1278, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635.

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Arts of Imperial Russia—Oct. 24-28:
Painting, architecture, literature, music and decorative arts under the czars, combined with tours of the opulent collection at Hillwood, as well as the current exhibition from the Tretyakov Gallery and the Russian Museum of Leningrad (Smithsonian, August 1979). Coordinated by the Kennan Institute.

China: A Cultural History—Oct. 28-Nov. 2, Mar. 23-28:
Prehistory to the enigmas of today, with emphasis on the intellectual and artistic traditions and the great philosophies and religions. Includes recent films and tours of the outstanding collection of the Freer Gallery of Art.

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Experts advise on how to work with architects, contractors and other professionals; explain mistakes to avoid and how to save money; and lead tours of Georgetown as well as famous country estates.

American Painting in the 19th Century—Mar. 2-7:
Exploration of the achievements of acknowledged masters, such as John Singleton Copley, Thomas Cole, Frederic Edwin Church, Winslow Homer, Albert Pinkham Ryder and Thomas Eakins. Includes tours of the Capitol, National Gallery of Art, NCFA and Portrait Gallery.

Please send requests for full information on content, accommodations and fees by seminar title to Selected Studies, A & I 1190A, Smithsonian Institution, Washington, D.C. 20560 or telephone (202) 381-6434 for details.

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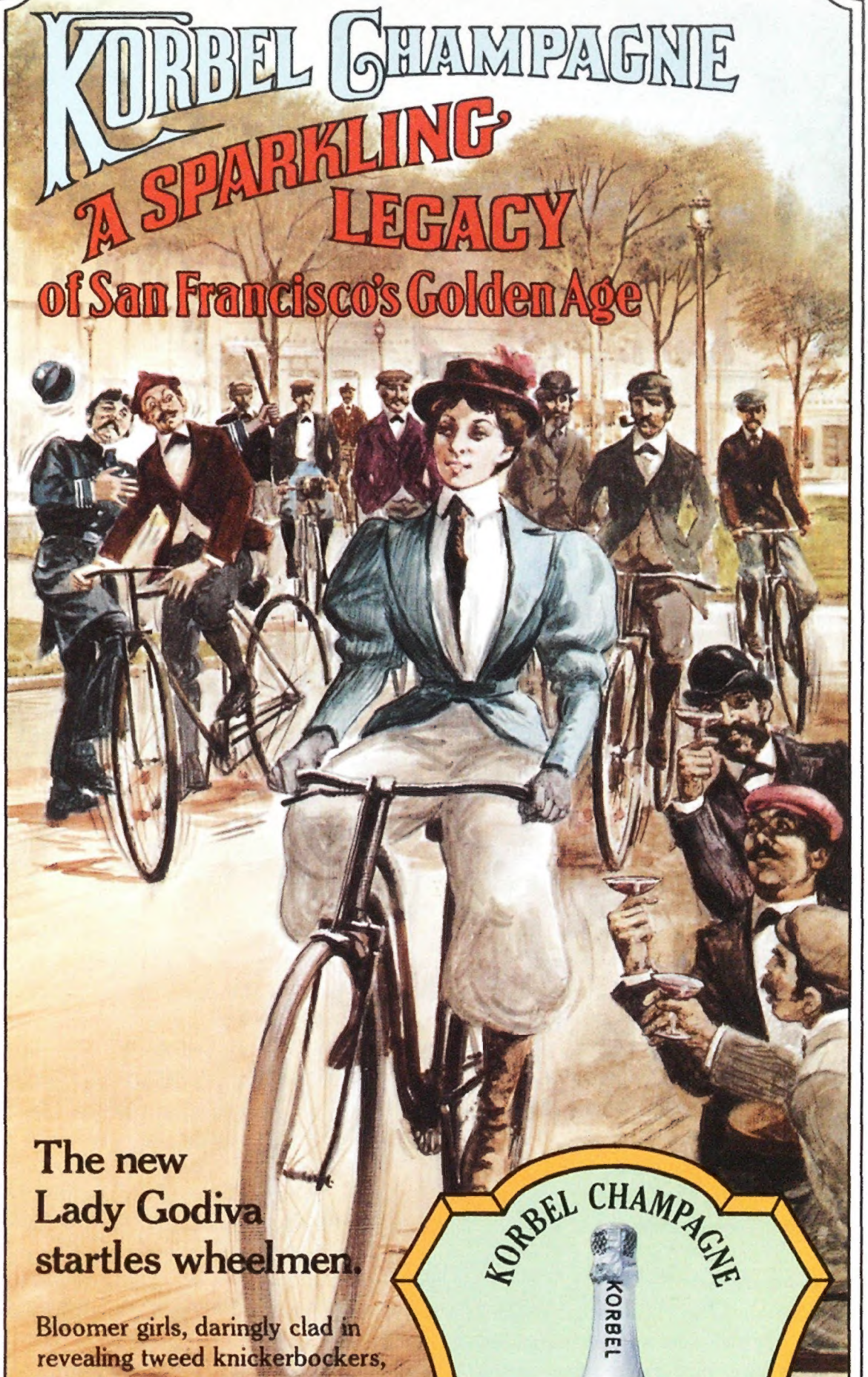

The new Lady Godiva startles wheelmen.

Bloomer girls, daringly clad in revealing tweed knickerbockers, are causing a great uproar among the city's wheelmen.

Apparently, the sight of silk to the knee proves to be a safety menace for some. Yet the cafe set raise their champagne glasses to passing Godivas as the bloomer debate continues.

There was a time, a golden city and Korbel.

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By Patrick Ryan

Seek perfection where angels should *fear to tread*

Accustomed as I am to being beset by cultures and creeds that counsel us to strive for perfection in all endeavors, it was perversely refreshing to read in the newspaper about a British pastry-making firm which deliberately introduces visual defects into its high-quality products. Though aiming to make the best fruitcake in the world, the company's founder revealed with pride: "Every cake contains an imperfection, so that an American housewife can take our cherry and walnut cake or our Sussex almond cake out of the tin and pretend it's homebaked." The reporter noted, "The almond nuts are carefully planned to look ever-so-slightly-not-quite-perfect."

Admonitions to us frail vessels to aspire to perfection begin in the Bible, and possibly the tallest order therein came from St. Matthew, who bade us all "Be ye therefore perfect, even as your Father which is in heaven is perfect."

Down the ensuing years, clerics, schoolmasters and self-appointed keepers of the public conscience have exhorted us to press ever onward to impeccability. Although the Founding Fathers resisted any pressure to make the pursuit of perfection obligatory under the Constitution, it was wished upon the American people by Alexis de Tocqueville in 1835 when he pronounced that "They have all a lively faith in the perfectibility of man. . . ." An attempt to demonstrate this proposition in action was made in 1841 when the sect of Perfectionists was founded by John Humphrey Noyes, who went to Oneida, New York, in 1847, to establish a community there. It was Noyes' firm belief that anyone who converted to his faith automatically would become free of sin.

Skeptics in the outside world, however, could not reconcile this assumption of sublime purity with another tenet of the creed that rejected monogamy, and enforced complex marriage rules under which each woman in the Oneida Community was regarded as the wife of every man, and he the husband of every woman.

The system of interlocking polygamy was eventually deemed imperfect and was abandoned in 1879. Later, the Oneida community was voluntarily dissolved and reorganized as a joint-stock company which still flourishes today in such fields as silver-plate manufacture.

The only living American who comes to mind as showing particular devotion to convincing the world that he has proved "the perfectibility of man" in his own person is The Greatest, Mr. Muhammad Ali. Lesser mortals, however, need not be too downcast about their own lean prospects of becoming paragons; there is a notable body of opinion which doubts if such ambition is at all worthwhile.

And what shall it profit a man if he achieve perfection? Where do you go from the ultimate end? "When a man says that he is perfect already," said Henry Ward Beecher, "there is only one of two places for him, and that is heaven or the lunatic asylum." Seconded by James Stephens, the Irish poet: "Finality is death. Perfection is finality. Nothing is perfect. There are lumps in it."

Which puts one in mind of the perfect deal at bridge, one complete suit each, utterly symmetrical, ideally patterned, but quite useless for having a decent game. And definitely, no lumps in it.

Should anyone still harbor pretensions to perfection of behavior, he or she should immediately turn for salvation to that work of Saki, *The Story-Teller*. Wherein one is reminded that good does not necessarily come from being good and that the way of the overvirtuous can be hard. As exemplified by the inner tale of "the little girl called Bertha who was extraordinarily good. . . .She did all that she was told, she was always truthful, she kept her clothes clean . . . and was polite in her manners."

She was therefore awarded three large medals for obedience, punctuality and good behavior. And in reward, she was allowed to play in the local Prince's beautiful park, into which no children were normally allowed.

An enormous wolf came prowling into the park and espied Bertha from afar by the gleam of her spotless pinafore. But she leaped for hiding into a clump of myrtles, the scent of which was so strong that the wolf could not detect her. Just as he was departing to find his supper some place else, Bertha trembled and "the medal for obedience clinked against the medals for good conduct and punctuality." The wolf thus located Bertha and "devoured her to the last morsel. All that was left were her shoes, bits of clothing, and the three medals for goodness."

Which just goes to show, doesn't it, that we may be safer if we quietly abandon all ambition toward terrestrial perfection. As a practicing Imperfectionist, I may well apply for a job at disarranging nuts for that wise British cake baker. Remembering, as I do, the aphorism of Stanley Randall that "The closest to perfection a person ever comes is when he fills out a job application form."

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